



ALBERTA OIL SANDS
ENVIRONMENTAL
RESEARCH PROGRAM

A Study of Human Adjustment
in Fort McMurray
Volume I: Field Study and Results

Project HS 30.5

December 1980



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ALBERTA OIL SANDS ENVIRONMENTAL RESEARCH PROGRAM
RESEARCH REPORTS

These research reports describe the results of investigations funded under the Alberta Oil Sands Environmental Research Program. This program was designed to direct and co-ordinate research projects concerned with the environmental effects of development of the Athabasca Oil Sands in Alberta.

A list of research reports published to date is included at the end of this report.

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A Study of Human Adjustment
 in Fort McMurray
 Volume I: Field Study and Results

Project HS 30.5

AOSERP Report 112

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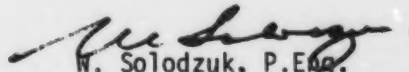
The Hon. J.W. (Jack) Cookson
Minister of the Environment
222 Legislative Building
Edmonton, Alberta

Sir:

Enclosed is the report "A Study of Human Adjustment
in Fort McMurray. Volume I: Field Study and Results".

This report was prepared for the Alberta Oil Sands
Environmental Research Program, through its Human System,
under the Canada-Alberta Agreement of February 1975 (amended
September 1977).

Respectfully,



W. Solodzuk, P.Eng.
Chairman, Steering Committee, AOSERP
Deputy Minister, Alberta Environment

A STUDY OF HUMAN ADJUSTMENT
IN FORT McMURRAY
VOLUME I: FIELD STUDY AND RESULTS

DESCRIPTIVE SUMMARY

Industrial growth associated with exploitation of the Athabasca Oil Sands has altered the region's economic and demographic structure and the local conditions of life. Between 1961 and 1979, there was an abrupt transition from the economy reliant on traditional activities such as hunting, trapping, fishing, and transportation to an industrial economy based on the oil sands extraction.

The population of the region has grown from approximately 2600 in 1961 to over 27 000 in 1979. The most spectacular growth has occurred in Fort McMurray, which from a community of 1200 in 1961 has grown into a regional urban centre of 26 000 inhabitants by 1979. Further growth in the region is expected to take place as a result of the proposed Alsands project, which probably will involve the building of a new town 90 km north of Fort McMurray.

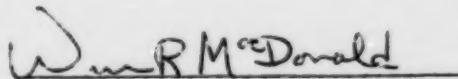
In view of the need to plan for the in-migration of people associated with future oil sands developments, it was important that the Human System of AOSERP obtain as much information as possible about social impacts of commercial development of the oil sands to date. Consequently, this research project was designed to identify and analyze the various specific dimensions and aspects of the social and personal adjustment of people to the current and past conditions of life in the Fort McMurray area.

The report entitled "A Study of Human Adjustment in Fort McMurray" was prepared by J.W. Gartrell, H. Krahn, and F.D. Sunahara or the Thames Group Research Inc., and of the Population Research Laboratory of the University of Alberta. The study is based on a survey of 430 randomly selected adults resident in Fort McMurray during June of 1979.

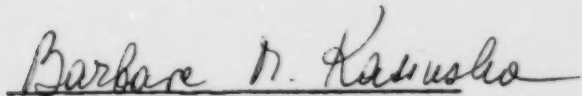
The authors of this report have succeeded in developing and implementing a very broad and comprehensive research design to meet the project's Terms of Reference. The Social indicators selected

emphasize outputs of the human adjustment process: demographic composition and differential population stability; the perceived quality of housing and of various services; labour force activity; incomes and standard of living; social participation and social support (particularly within the family); and individual subjective reactions to life in Fort McMurray. Given a formidable task of assessing social change on the basis of past and retrospective data, and given the limits of availability and quality of such data, the authors have presented a very comprehensive picture of life in Fort McMurray in 1979.

The report has been recommended for wide distribution. The Alberta Oil Sands Environmental Research Program thanks the authors for the contribution they made to enhancing the understanding of human adjustment to the current conditions of life in Fort McMurray. This report is made available as a public service. The Department of Environment neither approves nor disagrees with the conclusions expressed herein, which are the responsibility of the authors.



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A STUDY OF HUMAN ADJUSTMENT
IN FORT McMURRAY
VOLUME I: FIELD STUDY AND RESULTS

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through

Population Research Laboratory
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for

ALBERTA OIL SANDS
ENVIRONMENTAL RESEARCH PROGRAM

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TABLE OF CONTENTS

	Page
DECLARATION	ii
LETTER OF TRANSMITTAL	iii
DESCRIPTIVE SUMMARY	iv
LIST OF TABLES	xvi
LIST OF FIGURES	xx
ABSTRACT	xxiii
ACKNOWLEDGEMENTS	xxiv
SUMMARY OF FINDINGS	xxv
1. INTRODUCTION	1
1.1 Fort McMurray and Resource Development	1
1.2 Resource Development and Human Adjustment	3
1.3 Strategies for the Study of Social Change	4
1.3.1 Introduction	4
1.3.2 Comparisons with Other Places	4
1.3.3 Comparisons Over Time: 1969 to 1979	5
1.3.4 Cohort Comparisons	6
1.3.5 Change in Individuals	6
1.4 Indicators of Social Impact	7
1.4.1 General Questions	7
1.4.2 Demographic Factors	10
1.4.3 Housing	11
1.4.4 Services	11
1.4.5 Labour Force Participation	12
1.4.6 Social Participation	13
1.4.7 Family Life	14
1.4.8 Individual Perceptions	14
1.5 Summary	16
2. RESEARCH METHODS	17
2.1 Interview Design	18
2.2 Sampling	20
2.3 Field Procedures	22
2.4 Reliability: Test-Retest Results	23
2.5 Representativeness of the Sample	25
2.5.1 Demographic Comparisons: Sample vs Census ...	26
2.5.2 Sample Representativeness by Area	28
2.5.3 Housing and Employment Comparisons	31
2.5.4 Sample Representativeness: Conclusions	33

TABLE OF CONTENTS (CONTINUED)

		Page
2.6	Comparative Data	34
2.6.1	The Edmonton Area Study	35
2.6.2	Matthiasson's 1969 Fort McMurray Survey	35
2.7	Summary	36
3.	DEMOGRAPHIC FACTORS IN SOCIAL IMPACT	39
3.1	Introduction	39
3.2	Population Growth	40
3.3	Population Composition	42
3.3.1	Age and Sex Structure	42
3.3.2	Marital Status	46
3.3.3	Social Origin	47
3.3.3.1	Religious Composition	47
3.3.3.2	Ethnicity	50
3.3.3.3	Immigrants	50
3.3.3.4	Place of Origin	51
3.4	Geographic Mobility	51
3.4.1	Introduction	51
3.4.2	Number of Moves: Survey Results	53
3.4.3	Summary	56
3.5	Stability: Length of Residence in Fort McMurray ..	56
3.5.1	Introduction	56
3.5.2	Population Stability	58
3.5.3	Mobility Intentions	60
3.5.4	Differences in Stability Within Fort McMurray ...	63
3.5.4.1	Social Background and Demographic Factors.....	63
3.5.4.2	Area of Residence, House Type, and Housing Tenure	64
3.5.4.3	Expanded multiple regression results.....	67
3.6	Summary	71
4.	HOUSING	75
4.1	Introduction	75
4.2	Housing Stocks	77
4.2.1	Growth in Housing Stocks	77
4.2.2	The Changing Housing Mix	77
4.3	Shelter Costs and Subsidies	80
4.3.1	Introduction	80
4.3.2	Shelter Subsidies	81
4.3.3	Tenure Status, Income, and Length of Residence ..	83
4.4	Residential Mobility	86
4.4.1	Levels of Mobility	86
4.4.2	Type of Dwelling: Before and After Moving to Fort McMurray	86
4.4.3	Individual Changes in House Type by Cohort	89
4.4.3.1	Hypotheses	89
4.4.3.2	Moving to Fort McMurray	89

TABLE OF CONTENTS (CONTINUED)

	Page
4.4.3.3 Cohort differences in housing type	90
4.4.3.4 Change in House Type for the First Cohort	92
4.4.3.5 Change in House Type for the Second Cohort	92
4.4.3.6 Change in House Type for the most Recent Cohort ..	93
4.4.3.7 Individual Change over all three times	94
4.5 Housing Stability	95
4.5.1 Length of Residence in Dwelling	95
4.5.2 Regression Results	96
4.5.2.1 Years Resident in Fort McMurray	96
4.5.2.2 Housing and Environment.....	96
4.5.2.3 Respondent characteristics.....	100
4.5.3 Summary	101
4.6 Perceptions of Housing Quality	102
4.6.1 Hypotheses	102
4.6.2 Design Features	103
4.6.2.1 Comparisons with 1978	105
4.6.2.2 Housing Environments	106
4.6.3 Area, Housing Type, and Housing Tenure	106
4.6.3.1 Area	106
4.6.3.2 Tenure Status	109
4.6.3.3 House Type	109
4.6.3.4 Overall PHQ by Area, House Type, and Housing Tenure	111
4.6.3.5 Change in House Type	114
4.6.4 Determinants of Subjective Ratings of Housing Quality	115
4.6.4.1 Hypotheses	115
4.6.4.2 Environmental Factors.....	118
4.6.4.3 Housing Characteristics	119
4.6.4.4 Respondent Characteristics	120
4.7 Summary	121
5. USE AND EVALUATION OF COMMUNITY SERVICES	125
5.1 Introduction	125
5.2 Level of Use of Community Services	126
5.2.1 Health, Social, and Municipal Services	126
5.2.2 Use of Recreation and Entertainment Facilities ...	127
5.2.3 Differential Patterns of Service Use	130
5.3 Service-Related Problems Encountered in Fort McMurray	133
5.4 The Evaluation of Services in Fort McMurray	137
5.4.1 Service Evaluation in 1969	137
5.4.2 Service Evaluations in 1979	138
5.4.3 Differential Patterns of Service Evaluation	140
5.4.3.1 Use of Services	141
5.4.3.2 Experience with Other Resource Communities	142
5.4.3.3 Length of Residence in Fort McMurray	143
5.4.3.4 Area of Town	145
5.5 Summary	146

TABLE OF CONTENTS (CONTINUED)

	Page
6. WORKING IN FORT McMURRAY	150
6.1 Introduction	150
6.1.1 The Structure of the Local Economy	150
6.1.2 The Individual and the Labour Force	150
6.2 Labour Force Participation	151
6.3 Composition by Industrial Sector	153
6.4 The Occupational Composition of the Labour Force ...	156
6.4.1 General Trends	156
6.4.2 Employment by Sex	158
6.4.3 Sex Differences by Employer	160
6.4.4 Labour Force Structure of Fort McMurray: Summary	160
6.5 Individual Employment Histories	162
6.5.1 Employment Stability	162
6.5.2 Correlates of Employment Stability	163
6.5.2.1 Years in the Labour Force	163
6.5.2.2 Sex and Age of Respondent	165
6.5.2.3 Education	165
6.5.2.4 Years in Fort McMurray	165
6.5.2.5 Correlates of Employment Stability: Summary	166
6.6 Moving and Finding Work	167
6.6.1 Male Respondents	167
6.6.2 Female Respondents	169
6.6.3 Effects of Age, Education, and Years in Fort McMurray	169
6.6.4 Moving and Finding Work: Summary	170
6.7 Occupational Mobility	171
6.7.1 Patterns of Occupational Mobility	171
6.7.1.1 Moving to Fort McMurray	172
6.7.1.2 Staying in Fort McMurray	174
6.7.2 Correlates of Occupational Mobility	174
6.7.2.1 Moving to Fort McMurray	175
6.7.2.2 Staying in Fort McMurray	177
6.7.3 Occupational Mobility: Summary	177
6.8 Overtime and Second Jobs	178
6.8.1 Working Overtime	178
6.8.2 "Moonlighting"	179
6.9 Looking for Work	179
6.10 Summary	182
7. INCOMES AND STANDARD OF LIVING	184
7.1 Fort McMurray Incomes in 1978	184
7.2 Income Differences Within Fort McMurray	188
7.2.1 Problems in the Analysis of Income Differences ...	188
7.2.2 Socio-demographic Factors and Household Income ...	191
7.2.3 Multivariate Analysis	193
7.2.4 Low Income Groups	196

TABLE OF CONTENTS (CONTINUED)

	Page
7.3	Fringe Benefits 197
7.4	Standards of Living 201
7.4.1	Introduction 201
7.4.2	Estimates of Standards of Living 201
7.4.3	Difference in Standard of Living Within Fort McMurray 204
7.4.4	Vehicles, Household Possessions, and Investment . 207
7.4.5	Multivariate Analysis 209
7.5	Debt 211
7.5.1	Introduction 211
7.5.2	Level of Debt and Differences Within the Community 212
7.5.3	Multivariate Analysis 216
7.6	Summary 219
8.	THE QUALITY OF WORK IN FORT McMURRAY 221
8.1	Introduction 221
8.2	Attitudes Towards Employment 222
8.2.1	Hypotheses 222
8.2.2	Survey Results 223
8.2.3	Within-Community Differences in Attitudes Towards Work 225
8.3	Behavioural Intentions as Indicators of Job Satisfaction 228
8.4	Self-Reports of Job Characteristics 230
8.5	Job Satisfaction 233
8.5.1	The Level of Satisfaction Among Fort McMurray Workers 233
8.5.2	Job Satisfaction: Bivariate Relationships 236
8.5.2.1	Differences by Demographic Factors 236
8.5.2.2	Social Status 237
8.5.2.3	Other Employment Factors 238
8.5.3	Job Satisfaction: Multivariate Analysis 239
8.6	The Quality of Employment: Fort McMurray in 1969 . 245
8.7	The Quality of Employment in Fort McMurray: Summary 250
9.	SOCIAL PARTICIPATION: ORGANIZATIONS, NEIGHBOURS, AND FRIENDS 253
9.1	Social Relations in Urban Settings 253
9.1.1	Community Lost or Individual Freedom Gained? 253
9.1.2	Dimensions of Participation 255
9.2	Associational Affiliation and Community Participation 256
9.2.1	The Level of Activity: Memberships and Meetings 256
9.2.2	Differences Within the Community 257

TABLE OF CONTENTS (CONTINUED)

	Page
9.2.2.1 Hypotheses	257
9.2.2.2 Demographic Differences	259
9.2.2.3 Employment, Social Status and Participation	260
9.2.2.4 The Development of Association Ties	262
9.2.3 Civic Awareness	265
9.2.3.1 Knowledge of Office Holders	265
9.2.3.2 Length of Residence	265
9.2.3.3 Additional Correlates or Civic Awareness	267
9.3 Neighbours	269
9.3.1 Knowing and Visiting	269
9.3.2 Sub-Community, House Type, and Knowing Neighbours	271
9.3.3 The Development of Neighbourhood Ties.....	272
9.3.4 Correlates of Knowing Neighbours	277
9.3.5 Summary	278
9.4 Interaction with Friends	279
9.4.1 The Level of Interaction	279
9.4.2 The Development of Friendship Networks	281
9.4.3 Differences in Interaction with Friends	283
9.4.4 Contacts with Friends Outside Fort McMurray	285
9.5 Summary	285
10. FAMILY LIFE IN FORT McMURRAY	288
10.1 Introduction	288
10.2 Family Structure in Fort McMurray.....	290
10.2.1 Marital Status	290
10.2.2 Family Size	292
10.2.3 Fertility Comparisons	294
10.2.4 Labour Force Participation and Housing	295
10.3 The Quality of Family Life in Fort McMurray	297
10.3.1 Evaluating Family Life.....	297
10.3.2 Deciding to Move to Fort McMurray	300
10.3.3 Cohort Comparisons	303
10.3.4 Contact with Kin	306
10.3.5 Raising Children in Fort McMurray	310
10.3.6 Patterns of Marital Interaction	314
10.3.7 Determinants of Family Satisfaction	321
10.4 Summary	326
11. LIFE IN FORT McMURRAY: INDIVIDUAL EVALUATIONS	329
11.1 Subjective Indicators of Adjustment	329
11.1.1 General Satisfaction Measures	329
11.1.2 Affect Self-Reports.....	332
11.1.3 Measures of Alienation	334
11.1.4 Multiple Indicators of Adjustment	335
11.2 Differences Within Fort McMurray	338
11.2.1 Correlates of Negative Affect	338
11.2.1.1 Demographic variables	338

TABLE OF CONTENTS (CONCLUDED)

	Page
11.2.1.2 Labour Force Participation	339
11.2.1.3 Social Status	339
11.2.1.4 Formal and Informal Participation	341
11.2.1.5 Stress and Ill Health	341
11.2.1.6 Length of Residence in Fort McMurray	342
11.2.2 The "Cabin Fever" Hypothesis	343
11.3 Financial Self-Evaluations	346
11.3.1 Comparisons with Edmonton	346
11.3.2 Alternative Measures of Financial Satisfaction	349
11.3.3 Financial Satisfaction: Within-Community Differences	349
11.4 Summary	352
12. RESIDENTS' OPINIONS AND SUGGESTIONS	355
12.1 Residents' Opinions About Development	355
12.1.1 Who Has Benefitted Most?	355
12.1.2 Who Benefits Least?	358
12.2 Respondents' Suggestions for Improvements	363
12.3 Summary	369
13. A STUDY OF HUMAN ADJUSTMENT IN THE FORT McMURRAY AREA: SUMMARY	371
13.1 Introduction	371
13.2 Research Methods	372
13.3 Demographic Factors in Social Impact	372
13.4 Housing	373
13.5 Community Services	375
13.6 Working in Fort McMurray	376
13.7 Incomes and Standard of Living	377
13.8 The Quality of Employment	378
13.9 Social Participation	379
13.10 Family Life	379
13.11 Individual Evaluations of Life in Fort McMurray	381
13.12 Residents' Opinions and Suggestions	382
14. SUGGESTIONS FOR FURTHER RESEARCH	383
14.1 Introduction	383
14.2 Panel II: Mobility (1981)	385
14.3 Future Panel and Cross-Sectional Surveys	386
15. REFERENCES CITED	389
16. LIST OF AOSERP RESEARCH REPORTS	400

LIST OF TABLES

	Page
1. Sample and Census Comparisons for Age	27
2. Survey Outcomes by Area of Residence	29
3. Sample and Census Comparisons for Dwelling Type	32
4. Percentages Within Age Cohorts by Sex: Northwestern Canadian Communities (1976)	45
5. Marital Status by Age and Sex: Fort McMurray, 1979	48
6. Religious Affiliation: Community Comparisons	49
7. Region of Origin: Fort McMurray, 1979	52
8. Length of Residence in Fort McMurray (1969, 1979) and Edmonton (1979).....	59
9. Intentions to Stay in Fort McMurray (1969, 1979)....	62
10. Multiple Regression Equation: Area of Residence, House Type, and Housing Tenure as Determinants of Length of Residence in Fort McMurray	66
11. Multiple Regression Equation: Determinants of Years Residence	68
12. Dwelling Type by Shelter Subsidies	82
13. Income, Length of Residence, Tenure Status, and Housing Subsidies	85
14. House Type in 1979 by House Type on Arrival in Fort McMurray by Migration Cohort	91
15. Multiple Regression Equation: Housing Stability Within Fort McMurray	97
16. Respondents' Evaluations of Housing	104
17. Evaluation of Design Features by Sub-Community	108
18. Evaluation of Design Features by House Type	110
19. Housing Evaluation by House Type and Housing Tenure by Area.....	112
20. Multiple Regression Equation: Perceived Housing Quality with Selected Independent Variables	117
21. Community Service Use and Participation in Recreation and Entertainment Activities	128
22. Service Use, Recreation and Entertainment Activities by Length of Time in Fort McMurray	132

LIST OF TABLES (CONTINUED)

	Page
23. Service-Related Problems by Years Lived in Fort McMurray	134
24. Evaluation of Services.....	139
25. Average Service Evaluation by Length of Residence in Fort McMurray	144
26. Labour Force by Industrial Sector: Fort McMurray, 1961 to 1979	154
27. Labour Force by Occupation: Fort McMurray, 1961 to 1979	157
28. Occupation by Sex: Fort McMurray and Edmonton, 1979	159
29. Employer by Sex of Respondent: Fort McMurray, 1979	161
30. Employment Stability by Years in Labour Force by Sex, Age, Education, and Years in Fort McMurray ...	164
31. Multiple Regression Equations: Occupational Mobility in Moving to and Staying in Fort McMurray	176
32. Looking for Full-time Work by Time in Fort McMurray and Time on Present Job	180
33. Income Means and Quintile Limits: Fort McMurray (1978), Alberta (1977), and Canada (1977).....	185
34. Multiple Regression Equations: Respondents' 1978 Income with Selected Independent Variables	195
35. Fringe Benefits by Employer	199
36. Level of Living by Income, Education, Age, Household Size, and Years Resident	205
37. Vehicles, Household Possessions, and Property/Investment Indices by Education and Years Lived in Fort McMurray	208
38. Multiple Regression Equation: Level of Living with Selected Independent Variables	210
39. Debt by Income, Level of Living, Education, Age, Household Size, and Years Resident	213
40. Debt and Debt to Income Ratios by Credit Card Use and Total 1978 Household Income	215
41. Multiple Regression Equations: Debt (\$) with Selected Independent Variables	217

LIST OF TABLES (CONTINUED)

	Page
42. Attitudes Toward Work by Sex, Education and Income ...	226
43. Job Satisfaction: Behavioural Intentions, Fort McMurray (1979) and Canada (1974)	229
44. Self-Reported Job Characteristics by Sex, Education, Income, and Employer	232
45. Satisfaction with Specific Dimensions of Work	234
46. Multiple Regression Equation: Job Satisfaction with Selected Independent Variables	241
47. Job Satisfaction by Education by Employer	244
48. Job Satisfaction in Fort McMurray in 1969 by Sex, Age, Marital Status, and Education	247
49. Association Affiliation and Participation by Age	261
50. Associational Participation by Education	263
51. Knowing and Interacting with Neighbours: Fort McMurray and Edmonton	270
52. Knowing Neighbours by House Type for Residence Cohorts	276
53. Interaction with Friends: Edmonton and Fort McMurray	280
54. Marital Status of Adult Population: Fort McMurray, Edmonton, and Canada	291
55. Household Size, Children in Household, Live-Born Children, and Planned Family Size	293
56. Fertility in Fort McMurray and Other Parts of Canada by Age Group	296
57. Circumstances Surrounding Moving and Satisfaction with Family Life and the Community by Sex	302
58. Kinship Contact and Satisfaction with Family Life and with the Community by Time in Fort McMurray	308
59. Satisfaction with Family Life and with the Community by Parent-Child Interaction and Daycare-Babysitting Problems	315
60. Patterns of Marital Interaction	316
61. Satisfaction with Family Life and with Community by Marital Interaction Patterns	319
62. Family Life Satisfaction and Community Satisfaction with Selected Indicators: Zero-Order Correlation Coefficients	322

LIST OF TABLES (CONCLUDED)

	Page
63. Multiple Regression Equations: Family Life Satisfaction and Community Satisfaction with Selected Independent Variables	323
64. Affect Self-Reports	333
65. Powerlessness, Negative Affect, and Satisfaction Indices: Correlation Coefficients	336
66. Negative Affect: Analysis of Variance Results	340
67. Financial Self-Evaluations by Age, Years in Fort McMurray, Oil Company Employment, and Total Household Income	351
68. "Who has Benefitted Most from Oil Sands Development?" Grouped Responses	356
69. "Who has Benefitted Least from Oil Sands Development?" Grouped Responses	360
70. Respondents' Suggestions for Improvements	364
71. Samples and Panels in a Longitudinal Design	384

LIST OF FIGURES

	Page
1. The Alberta Oil Sands Environmental Research Program Study Area	2
2. Fort McMurray Town Map	21
3. Population Growth in Northern Communities: 1951 to 1978	41
4. Size of Housing Stocks, 1961 to 1979	78
5. Composition of Housing Stocks in Fort McMurray, 1961 to 1979	79
6. Dwelling Type Before and After Moving to Fort McMurray	87
7. Evaluations of Streets and Sidewalks by area of Town.	147
8. Labour Force Participation by Sex: Fort McMurray, 1961 to 1979	152
9. Employment Circumstances Surrounding the Move to Fort McMurray by Sex	168
10. Patterns of Occupational Mobility	173
11. Average Household Income by Migration Cohort	189
12. Average Household Income by Age, Marital Status, Household Size, and Education	192
13. Household Possessions and Investments	203
14. Job Satisfaction by Length of Residence in the Community; 1969, 1979	249
15. Association Affiliations in Six Nations and Fort McMurray (1969, 1979)	258
16. Associational Affiliations by Years Resident	264
17. Civic Awareness by Years Resident	266
18. Knowing Neighbours by Housing Tenure for Residence Cohorts	274
19. Interaction with Friends by Years Resident in Fort McMurray	282
20. Interaction with Friends by Age	284
21. House Type by Marital Status: Fort McMurray and Edmonton	298
22. Satisfaction with Family and Community: Migration Cohort Comparisons by Marital Status	304
23. Babysitting/Daycare Problems by House Type, Labour Force Participation, Kinship Contact and Sex	312

LIST OF FIGURES (CONCLUDED)

	Page
24. Satisfaction with Various Areas of Life in Fort McMurray and Edmonton	330
25. The "Cabin Fever" Hypothesis	345
26. Financial Self-Evaluations: Fort McMurray and Edmonton	348

ABSTRACT

This study was commissioned to assess the various dimensions of social and individual adjustment to life in Fort McMurray. The intention was to examine retrospectively the social impact of development in the Athabasca Oil Sands region and to create a dynamic baseline against which future change could be measured.

The major data source was the June 1979 structured interview survey of 430 adult residents of Fort McMurray. Data from a 1969 survey of the same community was re-analyzed to provide comparisons over time while Census materials and other sources were employed for across-community comparisons. The 1979 survey results allowed further assessment of changes over time through comparisons of migration cohorts and through analysis of self-reported information on individuals' life events.

Research results are presented in Volume I, organized into sections focusing on population and geographic mobility, housing, community services, labour force participation, incomes and standard of living, job satisfaction, social participation, family life, and individual perceptions of the quality of life in Fort McMurray. Volume I concludes with an account of respondents' opinions about development and suggestions for improvements in Fort McMurray, and suggestions for further research. Volume II, a technical manual, contains more detailed discussions of research methods and copies of the original survey materials.

ACKNOWLEDGEMENTS

We would like to thank first those who were most essential to the success of this study: the respondents who patiently answered our questions, and the interviewers and field staff who were involved in asking them. The staff of the Fort McMurray AOSERP office were very helpful, as were David Jones, the Fort McMurray Planning Team, Commissioner Vic Henning and his staff, and Doug Schmidt and the staff of Keyano College.

Gene Summers provided the benefit of his considerable experience in social impact research through all phases of the project. Wayne McVey was involved in the design of the survey instrument and he and his staff capably handled the sampling. Les Kennedy and Lyle Larson were also involved in designing the questionnaire and both provided constructive criticisms on an earlier draft of the final report. John Matthiasson generously gave us the original questionnaires from his 1969 survey of Fort McMurray.

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SUMMARY OF FINDINGS

Fort McMurray in 1979 only partially resembles the stereotype of fast growing resource towns. It does not appear to be a "high rolling", problem-ridden, grossly under-serviced community where everyone endures isolation and "primitive" conditions to make a "fast buck". In some ways, however, the popular conception of Fort McMurray is correct. The community has experienced rapid population growth, multiplying its population over 20 times in the last two decades. It does contain a high proportion of males, 11 for every 10 females, and high population turnover continues even though the community has again stabilized following completion of Syncrude's construction. The population has a high proportion of young people (only 7% are over 44). The labour force has a high proportion of those with relatively unstable employment histories and the population shows high geographic mobility before moving to Fort McMurray. Household incomes are high, averaging \$24 500 in 1978, as are standards of living.

Residents are relatively dissatisfied with the quality of their neighbourhoods and with external design characteristics of their housing such as landscaping, privacy, and places for children to play. Finding good entertainment was a problem for many respondents, as were vandalism, theft and problems with juveniles for residents of some areas of the community. Street and road maintenance and animal control were judged to be of poor quality. Fort McMurray residents generally know few of their neighbours. Family breakdown and marital infidelity are perceived to be common.

This is only a partial picture of Fort McMurray since both objective characteristics of the community and residents' perceptions show a dynamic urban community with little widespread social pathology. The population may be young and mobile but it also contains a high proportion of married couples who exhibit "normal" family raising behaviour and report high satisfaction with family life. Even with the construction of Syncrude, community stability

appears to have increased. The proportion of residents who expect to make Fort McMurray a permanent home has doubled. Housing costs are high and single family housing is difficult to obtain, yet some improvements have been experienced since the height of the Syncrude construction period. Service quality may not always be high but, again, there appear to have been improvements, particularly in the provision of health services, recreation facilities, and retail shopping. There is little evidence of either widespread conspicuous consumption or severe debt. While residents of Fort McMurray have a variety of suggestions for improvements in the community, most report that they are satisfied with their friendships, their family life, their jobs, and their economic circumstances. Furthermore, they are optimistic about their financial future.

In some respects, conditions that appear to be pathologic are not. Despite the combination of youth and unstable employment histories, the attitudes toward work held by Fort McMurray workers resemble those of other Canadians. Fully 40% of the employed respondents would hesitate to take the same job again, and one-third said they would take any job if it paid enough, yet similar results are found in Canada-wide surveys. What appears to be a low level of associational affiliation and participation is no lower than the relatively high (compared to other countries) Canadian norm. Fort McMurray residents are not well-integrated into neighbourhood or friendship networks but neither are residents of Edmonton. Adults in Fort McMurray do not feel particularly powerless or alienated and are somewhat more likely than Edmonton residents to report positive emotions. There is, therefore, little evidence that rapid development has had negative effects on the psychological orientations of Fort McMurray residents.

These generalizations are not intended to prove that Fort McMurray is a community without problems or that rapid growth and high mobility do not have social and personal costs. The adjustment to rapid change that has occurred did not "just happen" without a great deal of effort on the part of community residents and leaders.

Further effort will be necessary to deal with existent problems such as those in the areas of housing and community services since future development may exacerbate these problems and increase pressure on service-delivery systems.

Several caveats must accompany those observations. First, survey information relevant to the more chaotic construction periods is not available. The 1969 and 1979 surveys were carried out after the construction of the Suncor and Syncrude plants, respectively. Thus, the observations made probably reflect a community adjusting in a post-boom period. Second, with a single sample at one point in time, only "stayers" could be interviewed. It is impossible to determine how much of the social impact, either positive or negative, has been exported with people who have moved out of the community. Third, some of the problems described may simply be endemic to modern urban life. They may exist in other communities and they may have been present in Fort McMurray before large scale development occurred. Finally, but related to this third caveat, a single survey of Fort McMurray residents allows only the drawing of indirect inferences about the social consequences of oil sands development. The usefulness of this study will be increased when it becomes the baseline in an examination of future change.



1. INTRODUCTION

1.1 FORT McMURRAY AND RESOURCE DEVELOPMENT

Even to the casual observer, it is obvious that immense changes in existing communities and local economies have been created by the development of two large oil sands extraction plants in the Athabasca Oil Sands of northeastern Alberta. Of the four settlements in the large area depicted in Figure 1, the social impact of development has been concentrated in Fort McMurray. This study is directed toward an investigation and analysis of that impact.

Established about 200 years ago, Fort McMurray sits at the confluence of the Athabasca and Clearwater rivers, about 450 km north of Edmonton. In the 1950's it was still a town of less than 1000 that survived on timber, trapping, trading, and transportation. In 1979, it is a city of over 25 000 that lives on mining and oil. It was a town of unpaved streets and board sidewalks. Now it has an all-weather road linking it to the south, three jet flights a day, a local radio station plus a CBC repeater, and cable T.V. bringing in six channels.

After receiving approval in 1963, Great Canadian Oil Sands (now Suncor) began building a plant 32 km north of Fort McMurray. The peak construction work force was 2300 in 1966, and the plant went into operation in 1967. It now employs about 1500 to 1800 workers and produces an average of about 45 000 barrels per day of synthetic crude. This earns over \$200 million annually. Between 1973 and 1978, a second commercial oil sands plant was developed by Syncrude Canada Ltd. at Mildred Lake, 48 km north of Fort McMurray. With a design capacity of 125 000 barrels per day of synthetic crude, it employed over 7000 workers in its peak construction force (1976 to 1977). The total capacity cost for the project was over \$3 billion, and it is expected to have an operating labour force of a little less than 3000. The Alsands project, 65 km north of Fort McMurray, will be the third oil sands plant in the area. While it will involve the building of a new

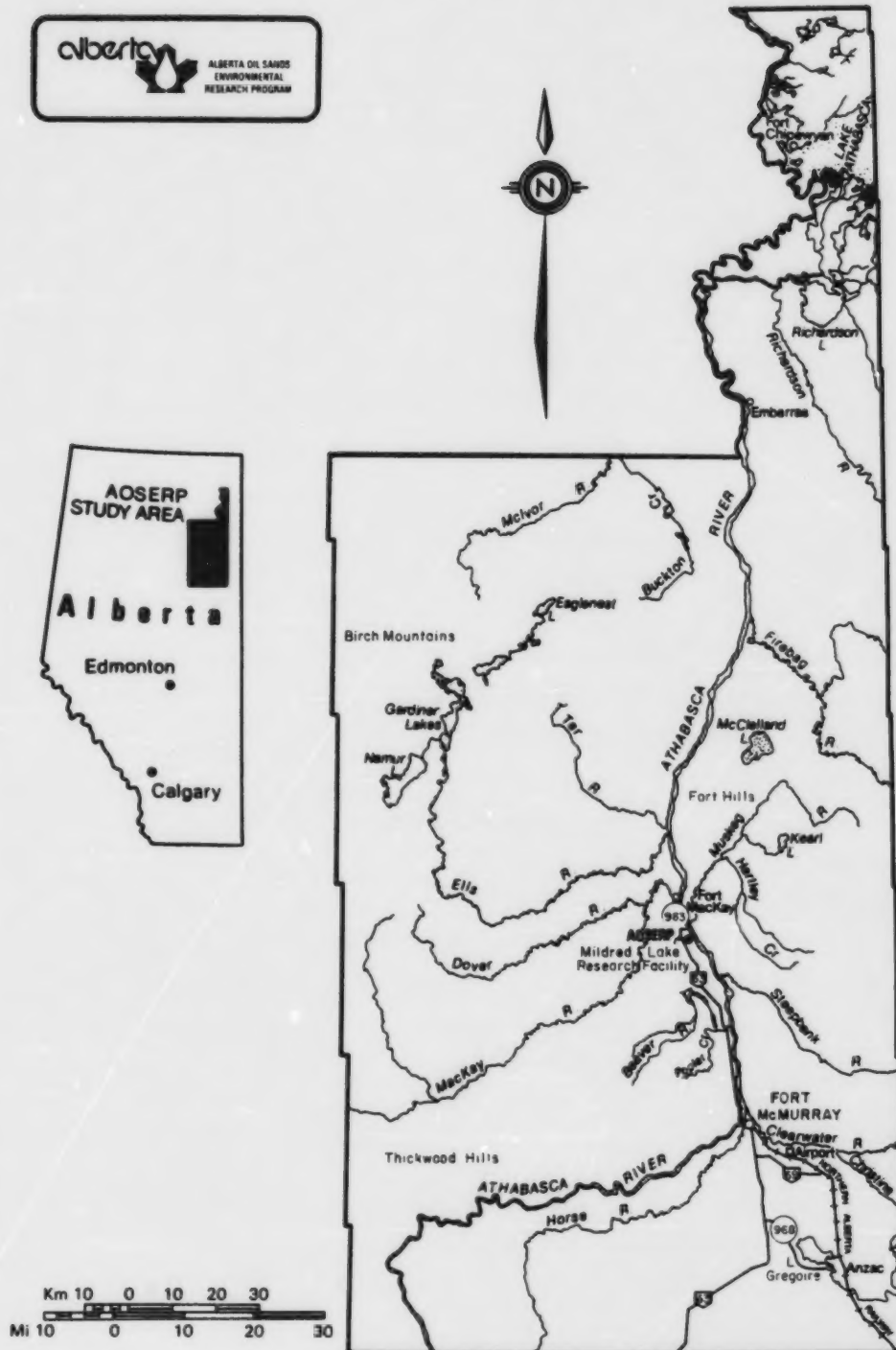


Figure 1. The Alberta Oil Sands Environmental Research Program study area.

town 90 km north of Fort McMurray, this multi-billion dollar project will stimulate another round of growth in the already existing city.

1.2 RESOURCE DEVELOPMENT AND HUMAN ADJUSTMENT

How can the impact of these past developments on the people of Fort McMurray be gauged? Is it possible to systematically describe and analyze social and personal adjustments to living conditions in a boom town? A sample survey of the adult population of Fort McMurray was designed and conducted with this goal in mind. Adults were randomly selected using methods designed to give all people in the community the same chance of being selected. Respondents completed an hour-long interview designed to collect information concerning social background, present status, and attitudes. The methods used will be discussed in more detail in Section 2 in this first volume of the report. The questionnaire itself can be found in Volume II.

In introducing the study, it is necessary to clarify what is meant by human adjustment and to link this definition to specific indicator areas. It will then be possible to consider the broad questions that guided the investigations and to discuss the analytical strategies used in this baseline study and preliminary analysis of the social impacts of change.

Examination of adjustment to life in Fort McMurray involves the study of social change: changes of individuals, families, and other social groups in response to alterations in their environment, both physical and social. There are two principal problems in such a study. First, the major environmental alterations, the construction of the oil sands processing plants, occurred in the past. It is difficult to examine the consequences of these events after they have happened with little direct reference to conditions before or during the change. Second, it is difficult to choose, from among the many possible indicators of social change, those which best measure the adjustment process of individuals and families involved (Snider 1979).

1.3 STRATEGIES FOR THE STUDY OF SOCIAL CHANGE

1.3.1 Introduction

How can a survey conducted after the oil sands plants were built provide information about the social impact produced by this development? It is clearly impossible to identify the causal process linking the building of these plants with social characteristics of Fort McMurray. There are, however, several analytical strategies that can be used to turn this first baseline survey into a study of change. These include comparisons with other places and other times, two strategies that utilize the community as the unit of analysis. In addition, there are two techniques which examine differences within the community. These are cohort comparisons and the examination of individual biographies (comparing individuals with themselves at an earlier time).

1.3.2 Comparisons with Other Places

This strategy for the study of change uses the community as a unit of analysis. Fort McMurray is compared to communities that have not experienced the changes that occurred in the Fort McMurray area. If these other places are similar to Fort McMurray, these similarities may be reasoned not to be the consequences of differences in development. The problem is, of course, that one consequence may have many causes.

It simply is not practical, or indeed possible, to seek comparisons with exactly or even crudely matched control communities not undergoing rapid development. Attempts to study such matched control cases have not been particularly informative where they have been tried (Beck 1972:106). No matter how careful the matching, too many differences remain.

Left with imperfect comparisons, it is difficult to be certain why things are the same or different. One can only speculate and look for more evidence. Still, that in itself is useful, as is the valuable, larger perspective that comparison

brings. While problems cannot be completely solved in this way, some useful clues can be found.

1.3.3 Comparisons Over Time: 1969 to 1979

A second comparative strategy that focuses on the community as a whole compares Fort McMurray with itself. Because there is only a single case in such an analysis, matching is no longer a problem. This is, in fact, the strategy proposed in the overall longitudinal design that uses the 1979 survey as a baseline for the study of future changes.

However, all need not wait for the future. John Matthiasson's 1969 survey of Fort McMurray provides a comparison point for 1979 and allows a glimpse of the kind of comparison that future surveys might bring. They would allow considerably expanded comparisons with the present baseline survey because they would be formulated precisely for that purpose. Unfortunately, Matthiasson's data collection efforts were not designed with this in mind.

The comparison of 1969 with 1979 is fortuitous in the coincidence of the timing of both surveys. Both were undertaken just after Suncor and Syncrude, respectively, went into operation. They are comparable in this sense, although they cannot provide any direct links. It was not possible to identify 1969 respondents for reinterviewing in 1979 since information on names and addresses was never collected. When considering the limited comparisons provided, it must be remembered that the timing of these surveys skipped the construction periods in Fort McMurray. People who came to the community during these construction booms but did not remain afterwards are not included in either survey. The comparisons made across the 10 year period do not allow a direct identification of those factors which caused observed stability or change. One can, however, observe whether things appear to have changed and, if so, in what direction. Such comparisons over time augment comparisons of Fort McMurray with other communities.

1.3.4 Cohort Comparisons

The third strategy for the study of change uses synthetic cohorts. A cohort is a population subgroup having some common characteristic (Shryock and Siegel 1973). This common trait is usually a major life event experienced within some particular period. Birth or age cohorts, for example, are commonly defined to include all people in a particular population who were born during a particular period (often five years in length), and who are still alive. Comparisons of such cohorts usually assume that the young will become like their elders as they mature, and that factors which affected development in the past will do so in the future.

Migration cohorts are particularly useful in this study. A migration cohort is defined as a group of present residents that came to Fort McMurray during the same time period and stayed. The problem, of course, is that those who left cannot be studied. This rather major caveat aside, the comparisons of migration cohorts are important because community stability is important. Comparisons of migration cohorts also illuminate changes that occur to those who stay in Fort McMurray. If living in a boom-town has some special effect on people, these effects may be assumed to be more pronounced as exposure increases. Given this assumption, differences and similarities across migration cohorts can help researchers to reconstruct the past, if only incompletely.

1.3.5 Change in Individuals

The fourth strategy for the study of change focuses upon individual respondents and, to some degree, upon their families as well. It uses the individual as his or her own control and looks for patterns in the social biographies of individuals. Relying upon retrospective information, it compares what someone is like now to what he or she was like in the past.

In this study, these comparisons are made between the periods before moving to Fort McMurray, just after arrival, and at the time of the study itself. The periods surrounding the move to Fort McMurray can thus be used as anchors in questioning

respondents about their past behaviour. Change, or absence of change, may help to describe the adjustment process that people have undergone.

This method also has some drawbacks. Changes that can be attributed to history or maturation (things that might have occurred despite living in a rapidly developing community) must be isolated. Problems with recall and distortions of memory limit this study primarily to questions about major life events and about behaviour rather than attitudes. Despite these problems, attempts to sketch individual biographies provide another perspective on changes produced by moving to, and living in, Fort McMurray.

A variety of questions about the social impact of development can be addressed with these four analytical strategies. Still, the second problem remains. What general substantive concerns should guide such an enquiry? What properties of the community and of its individual residents would provide both the best baseline for the study of future change, and an accurate assessment of the social impact of development that has already occurred?

1.4 INDICATORS OF SOCIAL IMPACT

1.4.1 General Questions

The location of large industrial plants in or near isolated, small towns brings sudden and, sometimes, rather traumatic changes to the impacted community (Summers et al. 1974). Change follows from massive capital investment, new employment opportunities, in-migration, population growth, and increasing demands for services. Massive development on a multi-billion dollar scale touches many aspects of peoples' lives. While the concept of human adjustment implies the fitting together of all aspects of the social situation, limited resources dictate the necessity of selectivity. How, then, can a parsimonious summary of the most important factors be provided? Again, the community as a whole is considered, as are differences within the community.

If the general concerns in this study were to be summarized in two questions for residents, they would have to be the familiar "what kind of a place is it to live in?", and "how are you making out?". These questions focus on whether or not the situation in Fort McMurray has provided opportunities both for material gain and for improvements in the quality of life. Examination of differences within the community beyond cohort differences focuses on the social location of negative or positive outcomes of development.

Very little social science theory relevant to a study of human adjustment to life in quickly changing resource towns is available. This study was not designed to construct theory. Instead, the goal was to provide a broadly based description of social relationships and community structures which are involved in the process of adjustment and which may be correlated with the outputs of the process. The process by which individuals and families adjust to development cannot be studied directly. Instead, status attainment and the quality of life are considered as outputs of the human adjustment process itself. These outputs include:

1. Socio-demographic characteristics of the population with special emphasis on selectivity in migration and stability in residence;
2. Ecological factors such as housing and services;
3. Labour force participation and both the intrinsic and extrinsic aspects of work;
4. Social relationships formed within formal and informal networks (including family life); and
5. Individuals' subjective evaluations of life in Fort McMurray.

These outputs of the adjustment process, described in more detail in Sections 1.4.2 through 1.4.8, form the subject of this investigation. Where possible, all four strategies for the study of change are applied in order to evaluate the impact of development. To locate different consequences of development within the

community, the independent variables of length of stay in Fort McMurray, sex, age, marital status, household size and number of children are employed. Differences between those who are employed and those who are not, a difference that applies primarily to women, are also inspected as are the effects of working for one of the major oil company employers. Education, household income, home ownership, and level of living are all used to measure social status differences. Differences by area of town and house type as well as indicators of both formal and informal participation are also introduced as independent variables.

Where possible, multivariate analytical techniques are used to introduce controls so that the independent effects of these factors and the degree to which they account for variation in social impact within the community can be examined. In general, sections are ordered so that factors considered as causally exogenous are introduced first. Thus, demographic characteristics and stability along with housing characteristics are discussed first, because they are used as independent variables throughout the analysis. Social relations (participation, family) follow and they in turn may influence individual adjustment.

Although this logic orders the report, the study has not been built around a detailed and all-inclusive social indicators model (Snider 1979). Rather than having the design of a study of Fort McMurray being pre-determined, it was considered preferential to begin with general questions such as those described above, and to take into consideration the peculiarities of Fort McMurray while shaping the study around these questions. A list of explicit hypotheses to be tested is not presented at the outset although, in effect, many hypotheses are tested in this report. Both the partially inductive approach and the already mentioned absence of particularly relevant social theory are responsible for this. If a series of systematically linked explicit hypotheses is absent, so too is a section containing detailed policy recommendations. Although some generalizations about the social structure of Fort McMurray and about life in the community are presented in the

Summary of Findings, the production of policy recommendations was not the goal of this study. The descriptive and analytic results may, of course, lend themselves to such an endeavour by others.

A brief summary of the research design is outlined in Section 2. Besides indirectly providing a description of the population, survey data are analyzed for: (1) reliability using test-retest methods; and (2) representativeness by sex, age, household size, area of town, type of housing, housing tenure, and industry.

1.4.2 Demographic Factors

Resource communities are compared on growth rates, age and sex distributions, and religion. What are the social origins of the residents of the New Town of Fort McMurray? Such a description introduces the independent variables that are used as "social locators" in examining differences within the population of Fort McMurray. It also allows examination of the hypothesis that rapid growth has generated a stereotypical new town with a population overrepresented with young, single males from outside Alberta and other transient residents.

Has the stability of Fort McMurray's population increased over the last decade, and what do people's intentions promise for the future? What factors are associated with longer residence? Are women more stable than men or do married people and those with children remain longer? Do those with higher educations, incomes, levels of living, or those that own their own homes stay longer? These are examples of the manner in which differentiation within the community is examined. Given the high cost of turnover for the individuals involved as well as their employers, and to the community at large, such questions are fundamental in an assessment of the kind of community that resource development has shaped.

1.4.3 Housing

Problems with housing are also fundamental, not only because housing is important to the quality of life, but also because the provision of good housing at affordable cost is particularly difficult in the north. What sort of opportunities do people have to get the housing they want? Have they been able to improve the quality of their housing by coming to Fort McMurray or has the quality of their housing deteriorated? How does this affect the subjective evaluation of the quality of housing, and how do these perceptions differ by housing type, area of town, housing tenure, and other factors?

Here migration cohorts can be used to provide an important initial reading on life in Fort McMurray. Have those that have been there longer been able to acquire better housing and do they rate their housing as being of higher quality. People who do not like their housing are probably more likely to leave. By this reasoning, those who remain longer are therefore probably more satisfied.

1.4.4 Services

The emphasis on subjective indicators of the quality of life is continued in an examination of ratings of service quality. As is the case with housing, rapidly developing communities often experience difficulties in meeting increasing demands for services. How do people rate various services (police, fire, shopping, street maintenance, etc.)? Does their experience in actually using them affect their ratings of the service? Problems may be more serious if it is the users who report them.

How do people who have lived in other resource communities rate Fort McMurray? Perhaps those who have had comparable experiences see Fort McMurray as a better situation. Again, differences between migration cohorts are examined to see if people who have lived longer in the community have come to evaluate services more positively. If they have not, then services may have

deteriorated over time or, alternatively, people may have learned to complain about them as they adjust to the culture of Fort McMurray.

This theme continues with an examination of day-to-day problems that people encounter no matter where they live. Presumably, finding such things as satisfactory tradesmen, medical care, or entertainment should improve with experience in the community. If it does not, then this may furnish possible negative indicators with respect to social adjustment.

1.4.5 Labour Force Participation

Throughout the report, employment and whether or not it is with one of the major oil company employers are used to locate differences in social impact within the community. The extrinsic rewards from employment (income and, indirectly, consumption levels) are also used as indicators of social status in much the same kind of analysis. In Sections 7 to 9, dealing with labour force participation, the overriding concern is with an examination of the opportunities that Fort McMurray offers to people who came to work and live there. Does Fort McMurray offer substantial opportunities in terms of:

1. Employment itself, particularly as it is involved in the move to Fort McMurray;
2. Career advancement and job status;
3. Income, fringe benefits, level of living, and debt (the material outcomes of employment and living in the community; and
4. The quality of work and job satisfaction.

The account of working in Fort McMurray examines industry and occupational structure and breaks down labour force participation by a number of factors, particularly sex and company (major employers). An attempt to achieve some perspective is made by comparing results with those of a similar survey in Edmonton (described in Section 2.6.1). How do education and experience affect income, level of living, and debt? Do people who have lived

longer in Fort McMurray have more debts and do earlier migrants to the community have higher incomes and higher consumption levels?

In looking at the perceived quality of work, changes in job satisfaction over the 1969 to 1979 decade are examined to see if satisfaction appears to have declined or increased. Migration cohorts are again compared. Greater job satisfaction for those who have lived longer in the community could indicate positive adjustment to life in Fort McMurray.

1.4.6 Social Participation

One of the problems with rapid community growth is reputed to be the lack of social participation produced by high turnover of community residents. The absence of social participation represents one of the possible costs of impermanence. Linkages with formal organizations and informal neighbourhood, friendship, and kinship networks provide the social support crucial to human adjustment.

Are those who have lived in the community longer more firmly integrated into different kinds of social networks? Do people put down roots in this sense and, if so, how quickly? Are there signs that participation is growing over time as the community develops? Given that it is difficult to judge when participation is "pathologically" low, participation rates in Fort McMurray are compared with those in Edmonton, Canada and other nations.

Within the community, does anyone appear to be systematically left out. Are there certain kinds of people that do not seem to participate in different kinds of activities? Differences between the old and the young, males and females, married and single, and those with children and those without are examined. Do the employed, particularly among women, participate more, and do they appear to have different kinds of social support networks at their disposal? Are there status barriers to some forms of participation? Do those who have more educational or material

resources also have more social resources in terms of social support? These are among the many questions that are raised with respect to people's integration into the community.

1.4.7 Family Life

In this section, attention is focused on the family as a social support mechanism. While participation in kinship networks is examined in the discussion of informal social participation, the quality of family life deserves more detailed attention (Larson 1979).

Do the pressures of adjusting to life in Fort McMurray result in a high quality of family life for some and not for others? Are married people as satisfied with the quality of their married life as, for instance, married people in Edmonton? How do residents of Fort McMurray assess family problems, and do they feel that their own family relationships have changed for the better or not with the move to Fort McMurray?

Along with limited comparisons with Edmonton, comparisons of migration cohorts are also useful. If those who have lived longer in Fort McMurray are happier with their family life and report better communication with their spouse, then it would appear that either turnover selects out those with "poorer" marriages, or the quality of married life improves over time. Pathological effects would be indicated by a decrease in the quality of family life over successive migration cohorts.

1.4.8 Individual Perceptions

In this analysis a search for possible negative impacts of development is conducted through examination of self-reported emotions such as depression or loneliness, powerlessness, and alienation. An attempt to evaluate the overall level of such possibly negative products of social change is provided through comparisons with results from Edmonton. The effect of social participation on individual perceptions is also considered. People who have put down "firmer roots" and have the advantages of more

extensive social support systems (links with friends, neighbours, kin or voluntary associations) would be expected to exhibit a more positive attitude towards their own well-being.

How serious is "cabin fever", a syndrome purported to be experienced by housewives because of the isolation of winters in the north? Are there certain "social types" that appear to suffer ill effects of living in Fort McMurray and is this different from what we might observe in other locations that have not undergone such developments? For example, people in Fort McMurray may be less satisfied with certain aspects of their lives than are residents of Edmonton.

If there are negative effects of development, do they appear to be more serious for long-term residents? If so, this may indicate difficulties with adjustment to life in Fort McMurray. A major caveat must be added to all such cohort comparisons. Without a sample of movers, as well as one of stayers, it cannot be determined whether those who left had adjusted any differently to life in the community than had those who stayed. It is possible that negative psychological effects are concentrated in those that leave. In this sense, it is possible to have a population which over-represents those who have adjusted to Fort McMurray. Negative effects may be exported.

An analysis of respondents' perception about the real beneficiaries of oil sands development is presented in Section 12. Do Fort McMurray residents think that the oil companies, the work force, the government, or local businesses have benefitted the most? Alternatively, what groups are perceived to have benefitted the least? Finally, the analysis concludes with a discussion of suggestions which respondents made for improvements in Fort McMurray.

1.5 SUMMARY

Having considered the meaning of social adjustment, it is apparent that it is a social process that must be studied in terms of social change. The outputs of that process are examined in this study. However, even though the present survey will form a baseline for future studies, it must establish a dynamic baseline. The conditions preceding any future change can hardly be considered static. Four analytical methods have been suggested to accomplish this purpose: comparisons with other places; comparisons over time; cohort comparisons within Fort McMurray; and analysis of change in individuals over time (social biographies). Together, these different methods have greater validity than one method alone.

In order to investigate the linkages between the establishment of the oil sands plants and social conditions as observed in 1979, a focus on the outputs of the human adjustment process has been suggested. These outputs include composition and differential selectivity in migration, population stability, the quality of housing and services, social relationships as indicated in participation in different social networks, and in the social support which that may bring, labour force activity and its outcomes in material well-being and job satisfaction, and individuals' subjective reactions to life in Fort McMurray. A number of factors designed to act as "social locators" for positive and negative consequences within the community have been introduced. These include sex, marital status, household size, length of residence, employment, income, education, home ownership, level of living and others.

2. RESEARCH METHODS

Data were collected using a face-to-face interview conducted with individual adults. The general research design and field tactics were based on Dr. Gene Summer's social impact research in southern Illinois (Summers et al. 1974). The interviewing for the Alberta Oil Sands Environmental Research Program survey of Fort McMurray lasted about 6 wk, from the last week in May until the end of June 1979. A detailed account of the research design and its implementation is included in Volume II of this report. That volume describes the pilot study, sampling procedures, field procedures, coding, and file preparation, and contains the interview schedule, codebook, and the codebook developed for Matthiasson's 1969 data. That material is summarized here, followed by an evaluation of the survey results in the form of: (1) estimates of reliability obtained through test-retest methods; and (2) tests for representativeness of the sample. The section concludes with a brief description of the 1979 Edmonton Area Study (EAS) and Matthiasson's 1969 survey. These two data sets are used to generate comparisons across place and time respectively.

The rationale for the use of a sample survey is based on the originally stated research goals: to establish a dynamic baseline for the study of human adjustment in response to the rapid development of Fort McMurray; and to obtain preliminary estimates of the social impact of development for a wide range of indicator areas for all segments of the community. The research therefore must be replicable and must provide information that can be used in monitoring change within a longitudinal design. In order to cover the indicator areas, it must also go far beyond the limited information obtained through the yearly Municipal Census. Over 500 variables were coded directly from the interview and a large number of others were calculated later. However, unlike the census, it was impossible to interview someone from every household. Random sampling methods, however, allowed interviewing of a sub-set of the population chosen in such a way as to maximize

the likelihood that those interviewed would accurately represent the whole population.

The choice of face-to-face interviews, even though they were more expensive and time consuming than self-administered questionnaires, was made for a number of reasons. First, the number of questions considered necessary exceeded the number usually included in questionnaire formats (which must be kept short since respondents have to complete them personally). Second, interviews were chosen because problems with completion rates which might jeopardize the representativeness of the completed sample were anticipated. For example, a questionnaire distributed by Alberta Housing and Public Works in February of 1978 generated a return rate of only 30% (Hobart et al. 1979). Third, because many of the questions required detailed responses which are difficult to collect in a questionnaire, interviews were considered a superior method. Finally, an independent random sample of individual adults was considered essential. Even a drop-off and pick-up method for delivering questionnaires would not insure that the forms were completed independently by a single adult. Furthermore, such methods would provide no way to randomly sample an adult from the household.

2.1 INTERVIEW DESIGN

The process of selecting questions began with examination of several lengthy questionnaires, diaries, and interviews constructed by Earl Berger in the initial phases of this project. Most of this material was rejected. Instead, a number of other available interview forms were used to obtain items with a history of previous successful use.

The interview schedules used most extensively were those provided by Gene Summers from his longitudinal sample surveys of social impact in southern Illinois (Summers et al. 1974); published interview forms used by the Quality of Life (Campbell et al. 1976) and the Quality of Employment surveys conducted by the Institute for Social Research at the University of Michigan; the 1973 Work Ethic Survey conducted by Canada Manpower and Immigration

(Burstein et al. 1975); the yearly sample survey (for 1979) of Edmonton conducted by the Population Research Laboratory, Department of Sociology, University of Alberta; and John Matthiasson's questionnaire used in his survey of Fort McMurray in 1969 (Matthiasson 1970, 1971). An effort was made to maximize comparability with the latter two of these instruments because of their potential usefulness in generating comparisons. Material for attitude statements (concerning life in Fort McMurray) was also extracted from Van Dyke and Loberg's (1978) community study of Fort McMurray.

Through a large number of lengthy meetings, the design team (Gartrell, Vlassoff, Krahn, McVey, Kennedy, and Larson) drafted an instrument that was much too long to administer. A pilot study was carried out in Fort McMurray during April 1979 (see Volume II). It examined interview length, organization, and complexity as well as question meaning, information yield, bias, and many other issues. The Pilot Study Team (Gartrell, Vlassoff, and Krahn) conducted 12 interviews and then shortened the instrument to about 75 min (average) in length. The shorter interview was again tested (in Edmonton) before the final version, presented in Volume II, was prepared.

The interview form used in the survey was examined by an Ethics Committee of the Faculty of Arts, University of Alberta. This was standard procedure since the Population Research Laboratory, Department of Sociology, was involved in the project and all university research dealing with human subjects comes under such scrutiny. Interviewers were carefully instructed regarding the confidentiality of information gathered in the interviews. Respondents were informed that their response was voluntary and that the confidentiality of their answers would be protected. When, at the conclusion of the interview, respondents were asked to give information that could be useful in future attempts to reinterview them, they were told the purpose of the information and their consent was again solicited.

2.2 SAMPLING

Given the ecological division of Fort McMurray into six sub-communities, these six naturally occurring areas were used as separate sampling frames. These areas are represented in Figure 2 as defined by the Fort McMurray Planning Team.

The individual dwelling unit was used as the Primary Sampling Unit (PSU). One adult over 16 years of age and not in school was interviewed from each household. A complete description of the sampling is included in Volume II.

PSU's were selected by two sampling teams under the supervision of Wayne McVey. The sampling design used systematic sampling with random starts and restarts designed to eliminate periodicity. Compared to selection by interviewers, this method increased quality control. Since sampling lists were constructed just prior to the survey, maximum updating was permitted.

The Fort McMurray Planning Team estimated that there were 8606 dwelling units in Fort McMurray on 1 December 1978. The total sample size was set at approximately 620 to yield an expected completed sample of between 430 and 500. This was based on expected completion rates ranging from 70% to 80%. The 8606 dwelling units divided by 620 PSU's yielded a sampling interval of 13.88. This was rounded to give an interval of 14. Dwelling units were selected by systematically driving through the whole area. The sampling team delivered a letter introducing the survey to each dwelling unit that had been selected. A total of 627 PSU's were selected in this manner.

Interviewers were sent to the selected addresses and, in the first part of the interview, gathered information (age, sex, education, employment) on all household members from any adult present. Using the sampling chart provided in the interview forms, they selected one adult to be interviewed. The six sampling charts, described in detail in Volume II, were randomly assigned to interview forms. Their use takes respondent selection out of the realm

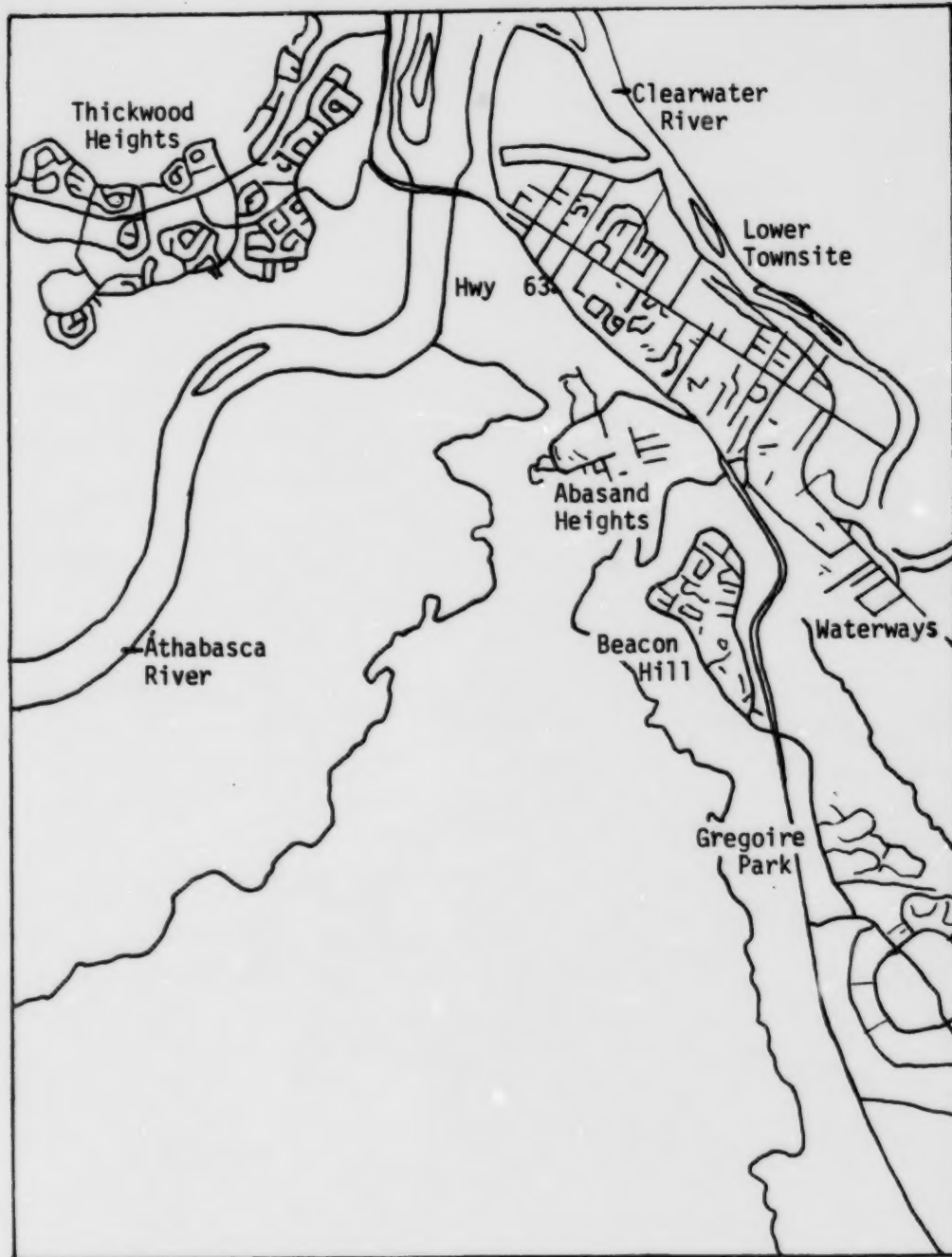


Figure 2. Fort McMurray town map.

of interviewer responsibility and insures a representative sample, since designated adults are proportionately represented in the six charts.

2.3 FIELD PROCEDURES

Data collection began with interviewer hiring (advertised on radio and T.V. and in the newspaper) through the Fort McMurray offices of AOSERP. The 28 local residents who were hired were asked to attend a training session the following week. Unfortunately, a previous attempt to discuss a draft of the interview schedule with local service agency representatives resulted in unauthorized distribution of the interview. This led to an expression of opposition by a member of the Town Board, at a presentation to that body by Dr. Gartrell and Ms. Kasinska (most Board members expressed approval). Between the interviewer hiring and training, the Fort McMurray Today published a letter to the Editor and a front-page "news" report under a headline referring to "super snoops". This was followed by some unfavourable comments in an editorial column. During this period, none of the newspaper staff was in touch with either AOSERP or the Study Team.

Only 17 of the original 28 interviewers showed up for the training, and several of them later quit (some got full-time jobs). Dr. Vlassoff, the Field Manager, hired and trained eight additional local interviewers and eventually five outside professional interviewers were brought in from Edmonton to help finish the interviewing. Interviewing started slowly with only 59 interviews completed between 23 May and 5 June. During that period there was a high refusal rate (22, or about 31%). The rate of interview completion improved between 6 and 19 June (173 completed) and the rate of refusals fell slightly (to 27%). In the last 2 wk, 208 interviews were completed and the refusal rate dropped to about 18%. This reflected the proficiency gained by local interviewers and the diminishing effects of poor initial publicity, as well as the use of professional interviewers.

Of the original 627 PSU's selected in the sampling, 63 could not be contacted, despite an average of five visits at different times on different days. About 77% of those contacted completed the interview. This produced a total of 433 completed interviews. However, three of these could not be used because of errors made by interviewers, or because there was too much missing data.

Interviewers accepted 131 refusals. These included sampled households where contact was made and household information was completed, but the selected respondent refused the remainder of the interview. No reason for the refusal was given in 43 cases (33%). In 58 cases (44%), refusals were classified as simply "busy" or "not interested". The bad publicity received by the survey was cited in 11 cases (8%) and in eight others (6%) the contact felt that surveys in general were an invasion of privacy. Two of the refusals were given because respondents felt that they were over-surveyed. Thus, negative publicity did not appear to be a major cause for refusals. Instead, as in most surveys, a general lack of interest on the part of respondents seemed to be the more important reason.

2.4 RELIABILITY: TEST-RETEST RESULTS

During the 6 wk of interviewing, telephone checks were carried out on 30 (7%) of the completed interviews. These telephone checks were done approximately 2 wk after the actual interview was completed. Their aim was to check whether the interviews had in fact been done with the correct respondent, and to gather estimates of test-retest reliability for different kinds of information collected in the interview. While many sample surveys do not perform (or report) such checks, it was felt that they were important in assessing the accuracy of collected information.

The telephone re-interviews lasted about 10 min and involved two kinds of questions. The first questions were intended to certify that an interview had been completed at the

address and that it had been conducted with the respondent listed in the questionnaire. This was followed by asking the birth date and year of the respondent. The only discrepancies found were minor and involved two cases where small mistakes had been made by the interviewer.

The second type of question asked in the telephone retest was designed to estimate the accuracy of recall. This involved questions that dealt with behaviour and items that solicited the respondents's attitudes. The hypothesis was that the former items would have higher test-retest reliability than the latter, particularly since behaviour reported referred to past events, and could not change.

The items referencing behaviour recall involved different periods of time: number of moves since coming to Fort McMurray (question 32b), number of days away from Fort McMurray during the past year (question 84), and number of hours of volunteer work done in the month preceding the survey (question 81). These items involved increasing detail with shorter periods of recall. Of the 30 respondents re-interviewed, 28 (93%) gave the same answer to the question about the number of moves within Fort McMurray and the other two differed by only one move in each case. All 30 respondents (100%) gave the same answers to questions about the number of hours of volunteer work that they had performed in the month before the original interview. Two respondents said that they could not remember how many days they had been away from Fort McMurray in the past year, one gave an answer slightly different from that recorded in the original interview, and 27 responded similarly to their first answer (90%). The patterns of responses to these three items suggest that recall questions of this kind produce reliable data.

Attitude statements had to be restructured for the telephone checks. Respondents could not be asked to respond according to the seven-point scales used in the original interview; difficulties would have been encountered since the card depicting the scale was not available. Consequently, this modest test of reliability was based simply on whether respondents gave positive,

negative, or neutral answers both times. Answers in the original interview were collapsed into three categories (1 to 3, 4, and 5 to 7) and comparisons are therefore only approximate.

Three different items were used. They were opinion statements asserting that: "It's easy to make friends in this community"; "There is a lack of co-ordinated planning around here"; and "Life here seems to be a continual financial struggle". These are questions 103n, o, and t in the interview schedule reported in Volume II.

Out of the 30 people re-interviewed, 90% (27) responded in the same manner both times to the question dealing with the ease of making friends. Of the 28 people who responded to the other two items, 19 (68%) responded consistently to the question dealing with the lack of co-ordinated planning, and 18 (64%) gave the same answer about life being a continual financial struggle. Attitudes could actually change over the 2 wk period between interviews, and differences may, therefore, reflect both a lack of accuracy and actual change. Considering the crude metrics and approximate comparisons used, the 90% agreement for ease of making friends shows a very high level of reliability. The other two attitude items show lower, but acceptable, stability.

Taken all together, and within the limits of the test as described, the results of our retest on both behavioural and attitudinal questions leads to the conclusion that the interview produced reliable data. Levels of accuracy were satisfactory in all cases, and quite high in most.

2.5 REPRESENTATIVENESS OF THE SAMPLE

One of the difficulties with sample surveys is the frequent lack of population parameters necessary to test the representativeness of the sample. Information about the population either is not available or it is dated. Fortunately, results from the New Town of Fort McMurray 1979 Municipal Census provide the opportunity to overcome some of these problems. Given the rapid change in Fort McMurray's population, it was fortuitous that the

census was conducted at the same time as the AOSERP survey, and that a wide variety of information was collected and tabulated. The official Census Day was 1 June while the AOSERP survey began on 24 May and ended on 29 June.

Tests for sample representativeness were limited by the manner in which census results were displayed. Often they reported figures for the population as a whole without age breakdowns. Since the survey sampled only adults (over 16), and since the population in 1979 contained 39% children, comparisons could not be made unless the unit reported was the household, or results were displayed by age groups. Despite these limitations, sample results can be tested for representativeness by sex, age, household size, area of residence, house type, housing tenure, and industry. Tests for representativeness on these demographic, geographic, housing and employment factors cover many of the indicator areas represented in the survey.

2.5.1 Demographic Comparisons: Sample vs. Census

In the 1979 AOSERP survey 198 men (46.0%) and 232 women (54.0%) were interviewed. The 1979 Municipal Census reported that, for all age groups, 52.9% of the town residents were male and 47.1% were female. Using these proportions to generate expected frequencies, the probability of observing the frequencies found in the sample survey by chance alone (chi-square test) is less than 0.01. In other words, males were significantly under-represented in the 1979 AOSERP sample. In the analysis which follows, sex differences are examined for each indicator of social impact. When these differences appear to be important, separate analyses for males and females are performed. The sample remains representative within sex, since the methods of selection were random for both males and females.

The population of Fort McMurray is very young. The average age of the respondents in the 1979 AOSERP survey was 31.6 years with a standard deviation of 9.73 years. Over one-half of the sample was below 30 (Table 1) and ages ranged from 17 to 71.

Table 1. Sample and census comparisons for age.

Age Groups (years)	Census	Sample	
	Proportion Expected ^a	Frequency Observed	Proportion Observed
25-29	0.303	106	0.329
30-34	0.261	90	0.279
35-44	0.273	83	0.258
44-54	0.112	30	0.093
over 54	0.046	13	0.041
Total	0.995	322	1.000

^a Calculated by dividing reported percentage within age group by the total percentage in all age groups 25 and over (New Town of Fort McMurray Municipal Census 1979:4).

Only 10.1% of the sample were over the age of 44. The age distribution of the sample corresponds closely to 1979 Municipal Census results. The sample slightly under-represents those under the age of 25. The census observed 23.5% of those over 19 in the 20 to 24 cohort. The sample contained 24.4% in the 17 to 24 cohort. Since 17 to 19 year olds probably constitute more than the difference between these two percentages, young adults may be under-represented in the sample.

However, for those over 24 the sample is representative. Overall differences between frequencies observed in the sample and those expected on the basis of the age distribution in the 1979 Municipal Census were not significant (chi square = 2.55, df = 4, $p > 0.05$). Differences between the sample and the census probably occurred by chance.

Household size was not reported in the 1979 Municipal Census results for Fort McMurray. In the 1979 AOSERP sample survey, one-person households make up 9.8% of the sample and two-person households comprise 21.4%. Three person households make up 19.1%, four-person households make up 26.5%, five-person households 14.2%, six-person households 5.6%, and households with seven or more members make up 3.5%. Statistics Canada reports that, in Fort McMurray in 1976, 30% of the households were one- or two-person, 44% were three- or four-person households, and 26% were households with five or more members (Buse 1978). The 1979 AOSERP sample results did not differ significantly from this expected distribution (chi square = 1.68, df = 2, $p > 0.05$).

2.5.2 Sample Representativeness by Area

The number and proportion of interviews completed in different areas of Fort McMurray is shown in Table 2. The proportions expected are based on 1979 Municipal Census results. Lower Town, the largest area (1979 population 10 621) contained 46.3% of the 8597 dwelling units enumerated in the 1979 census. The 1979 AOSERP sample under-represented this area, since only 40.2% of its respondents lived there. Waterways, Beacon Hill,

Table 2. Survey outcomes by area of residence.

Area	Proportion Expected ^a	Proportion Observed	Outcome of Interview Attempt						Total N %	
			Completed		Refusal		No Contact			
			N	%	N	%	N	%		
Abasand Heights	0.106	0.135	58	73	13	16	9	11	80	100
Beacon Hill	0.083	0.086	37	70	14	26	2	4	53	100
Gregoire Park	0.101	0.121	52	85	9	15	0	0	61	100
Waterways	0.031	0.037	16	72	5	23	1	5	22	100
Lower Townsite	0.463	0.402	173	61	67	24	44	15	284	100
Thickwood Heights	0.216	0.219	94	76	23	18	7	6	124	100
Total			430	69	131	21	63	10	624 ^b	100

^a Proportion of dwelling units within each area, based on the New Town of Fort McMurray Municipal Census (1979:7).

^b This total excludes three interviews completed in Lower Townsite, but not used in the analysis due to interviewer error or extensive missing data.

Gregoire Park, Thickwood Heights, and Abasand Heights were all slightly over-represented in the sample.

Based on the distribution over all six areas, the sample appeared to be representative when compared to the 1979 Municipal Census results. The chi square for the test of differences between expected and observed frequencies was 7.30 ($df = 5$). The probability of observing these results by chance was greater than 0.05. The distribution by area for the completed interviews did not differ significantly from that expected on the basis of the 1979 Municipal Census results. In other words, completion rates were not significantly different across the six sub-communities. As shown in Table 2, Gregoire Park had the highest rate of completion (85%) and the Lower Townsite had the lowest rate of completion (61%).

The distributions for refusals and "no contacts" shed added light on sample representativeness. Beacon Hill, Lower Townsite and Waterways all had somewhat higher refusal rates than did the other three areas. There was not a significant difference between areas from that expected by chance alone (chi square = 4.29, $df = 5$, $p > 0.05$).

There was, however, a significant difference across areas in interviewers' inability to contact anyone at the sampled addresses - the "no contact" column in Table 2 (chi square = 19.10, $df = 5$, $p > 0.01$). The rate of no contact was highest in the Lower Townsite (15%) and was also high in Abasand Heights (11%). Thickwood Heights (6%), Waterways (5%), and Beacon Hill (4%) were all considerably lower. In Gregoire Park all the sampled dwellings (all mobile homes) were contacted. Interviewer reports suggest three reasons for these differences: (1) the proportion of single males; (2) the proportion of apartment dwellers; and (3) the proportion of shift workers. Difficulties with access to apartment buildings were reported repeatedly in the Lower Townsite and difficulties in contacting and interviewing both single and married shift workers were reported in Abasand Heights and the Syncrude housing in the Lower Townsite. These difficulties appeared to be

most severe in the high-rise towers which form part of the latter development. These difficulties may also in part account for the sex bias (under-representation of males) observed above. However, contact difficulties did not appear to introduce an overall bias in terms of age, although, as noted above, the sample did contain fewer young adults (ages 17 to 24) than expected on the basis of census results.

2.5.3. Housing and Employment Comparisons

Given these observations, it becomes all the more important to examine distributions in the important indicator areas of housing and employment. Even though the sample was judged to be representative by area of residence within the town, the pattern of difficulties in contacting respondents suggested that there might be problems with representativeness by housing type, housing tenure, and employment. Apartment dwellers might be under-represented and so too might owners, since apartments in Fort McMurray are not owned. For employment, the distinction that was of particular import to the analysis of social impact was that between those who worked for one of the major oil companies (Suncor or Syncrude) and all other workers.

The sample did under-represent apartment dwellers (Table 3). On the basis of the 1979 Municipal Census, 27.8% of the sample live in such dwellings. Only 19.8% of the AOSERP sample did so. Those who live in other multiple household dwellings (duplexes, townhouses) were slightly over-represented in the sample. Those who live in mobile homes were even more over-represented. The latter probably reflects the high contact rates in Gregoire Park, where all the dwellings were mobile homes.

In order to take this under-representation of apartment dwellers and over-representation of those in other multiple family housing and mobile homes into account in analyzing the effects of housing on other impact indicators, analysis will rely on the simple distinction between those who live in single family housing and all

Table 3. Sample and census comparisons for dwelling type.

Dwelling Type	Census		Sample	
	Proportion Expected ^a		Frequency Observed	Proportion Observed
Single	0.290		122	0.288
Apartment	0.278		84	0.198
Other Multiple ^b	0.234		110	0.260
Mobile Home	0.199		108	0.255
Total	1.001		424	1.001

^a Proportion of dwelling units by type based on the New Town of Fort McMurray Municipal Census (1979:8).

^b Includes semi-detached, row (townhouse), triplex, and other.

others. Those who live in single family housing were represented proportionately in the sample (Table 3).

The Fort McMurray 1979 Municipal Census reported tenancy status as owner-occupied, lease-purchase, rental, and other. There was, however, apparently some confusion between the owner-occupied and the lease-purchase statuses. The latter probably were under-reported and the former over-reported because lease-purchase involves ownership rights (New Town of Fort McMurray 1979:9). These two categories were therefore collapsed in testing the representativeness of the 1979 AOSERP sample. Combining rental with other gives a simple own versus rent comparison.

Results for the 428 cases responding to these questions in the 1979 sample survey showed 46% in owner-occupied and lease-purchase dwellings. Census results gave 48%. This difference is not significant ($Z = 0.756$, $p > 0.05$), although its direction may in some part reflect our under-sampling of rented apartments.

Finally, sample representativeness by industrial sector is important in accurately representing the impact of Suncor and Syncrude within Fort McMurray. The distinction of most interest is therefore between those employed in mines, quarries, and oil and all other workers. In the 1979 Fort McMurray census, they comprised 40.2% of the labour force. The AOSERP survey coded 40.7% of those employed as working in the Standard Industrial Classification (SIC) covering mines, quarries, and oil wells. These results are not significantly different from those expected on the basis of census proportions ($Z = 0.162$, $p > 0.05$). The proportion of workers in the major industrial sector was therefore accurately represented in the sample.

2.5.4 Sample Representativeness: Conclusions

The 1979 AOSERP sample was tested for representativeness on a wide range of factors, and interview outcomes were examined in detail for clues as to the source of possible sampling bias. According to the 1979 Municipal Census of Fort McMurray, the AOSERP sample was probably representative in terms of age, area of

residence, housing tenure, and industry of employment. The sample distribution by household size also appeared to be representative compared with 1976 Census of Canada results for Fort McMurray. Only for the youngest category of adults (under 24 years of age) did there appear to be under-representation in the sample, and it was not severe enough to render the over-all distribution unrepresentative.

When the 1979 Municipal Census was used to generate expected frequencies, the sample was probably not representative in terms of sex and house type. Males and those living in apartments may have been under-represented because of problems in making contact with them. Those living in single family housing were accurately represented in the sample survey.

Rather than weighting the sample to reproduce representativeness, the analysis which follows systematically examines male-female differences and conducts analysis separately by sex where necessary. While some analysis of house type (particularly that of house type change over time) continues to utilize the more detailed breakdown, house type will be used primarily as a dummy variable (single family versus all others) in the analysis which follows.

2.6 COMPARATIVE DATA

In addition to secondary data published by Statistics Canada, two other data sets were available for comparative purposes. The first was the EAS, a sample survey conducted in Edmonton in 1979. The second was provided by John Matthiasson, Department of Anthropology, University of Manitoba, and consisted of data from a sample survey conducted in Fort McMurray in 1979. The 1979 AOSERP survey was designed to maximize its similarity with both of these surveys so as to provide comparisons across both space (Edmonton) and time (Fort McMurray in 1969).

2.6.1 The Edmonton Area Study

The EAS is conducted annually by the Population Research Laboratory (PRL), Department of Sociology, University of Alberta. The 1979 study, conducted in the early spring of 1979, was directed by Les Kennedy and Herb Northcott. The sampling frame was a list of addresses compiled in 1978 by the City of Edmonton from their yearly census (PRL 1979). A sample of 584 PSU's was randomly selected from this file. As in the Fort McMurray sample, the PSU was the dwelling. During the 2 mo of data collection, 19 addresses which were found to be vacant or demolished were replaced by 19 dwellings selected in a second random sample. Of the 584 addresses sampled, 440 completed interviews were obtained giving a completion rate of 75.3%.

To be eligible as a respondent, individuals had to reside in the sampled PSU and be 18 years of age or over. In family units, the respondent was usually one of the spouses. In non-family units, any resident 18 years of age or over could qualify as a respondent. Interviewers were also instructed to ask for the male household head in the initial third of their interviews in an attempt to insure a representative split between males and females. After the first third of the interviews this quota was dropped.

The EAS involved a fixed schedule of questions administered in a face-to-face interview by a trained interviewer. The topics covered ranged from standard social, economic, and demographic questions to attitudes on a number of subjects. The expertise of the PRL is widely recognized and the results of the EAS provide comparative data of a very high quality.

2.6.2 Matthiasson's 1969 Fort McMurray Survey

While data from the EAS were already available in machine readable form, Matthiasson's survey results were available only on the original questionnaires. These were obtained from Dr. Matthiasson, information was coded, and a computer file was established and edited.

The survey sampled every fourth dwelling (PSU). Two graduate students delivered and collected self-administered questionnaires during the summer of 1969. If the occupants of the household were married, both the husband and wife in each dwelling were asked to complete the questionnaire. Dr. Matthiasson reported a response rate of over 90% and the final sample consisted of 233 males and 235 females (Matthiasson 1970, 1971). However, 10 years after the survey was conducted, only 455 questionnaires could be found and two of these proved to be unusable. This provided a sample size of 453 for the present study.

The Matthiasson survey used the dwelling as the PSU, as did both the 1979 AOSERP survey and the 1979 EAS. The difficulty with the sampling design was that it did not produce independent observations. Both husband and wife responded in many cases and their selection cannot be considered independent. Unfortunately, it is impossible to determine who was married to whom. Thus, husbands and wives cannot be matched in order to draw an independent random sample from the completed interviews.

These data are used for comparative purposes despite this major caveat. Comparisons across time for Fort McMurray would otherwise be impossible to obtain. Still, in making these comparisons it should be noted that adults were not independently drawn for the 1969 sample and that the sample is probably non-representative in a number of ways (married people, for example).

2.7 SUMMARY

The sample survey design used face-to-face interviews between 24 May and 30 June 1979 to collect information from 430 randomly selected adults resident in Fort McMurray. Six sampling frames corresponding to areas of the city defined by the Planning Team were used in a two stage sampling procedure. PSU's (dwelling units) were selected using systematic random sampling with random starts and periodic restarts in each of the six areas. The sampling interval for PSU's was 14. In the second stage of the sampling, interviewers randomly selected one adult from each PSU.

Interview questions were designed to maximize comparability to the EAS and Matthiasson's survey of Fort McMurray in 1969. While individual items were gathered from a number of sources, Gene Summer's instruments and the survey design he used in his study of the social impact of the Jones-Laughlin Steel plant on the Hennepin area of southern Illinois were the starting point. Where possible, items were designed to yield interval or ratio level measures. Questions were pretested in Fort McMurray and Edmonton, as were several elements of the research design.

Data were collected by both locally hired and trained interviewers and professional interviewers brought in from Edmonton to complete the study. The 430 completed interviews gave an overall completion rate of 69%. Refusals were accepted in 131 cases. No contact could be made with residents of 63 of the sampled dwellings. Thus, 77% of these contacted agreed to answer the questions. General apathy appeared to be the main reason for refusals.

Retests conducted in brief telephone call-backs with 30 respondents gave estimates of accuracy on a limited number of both behavioural and attitudinal items. Levels of accuracy were generally high for the behavioural items despite variable periods of recall. For the attitudinal items, comparisons were somewhat less exact, but levels of reliability were judged to be satisfactory.

Using principally the New Town of Fort McMurray 1979 Municipal Census to generate population parameter values, the sample appeared to be representative in terms of age, area of residence, housing tenure, industry of employment, and household size. Apartment dwellers were under-represented and mobile home dwellers slightly over-represented. Those living in single family housing were proportionately represented in the sample. However, the sample was not representative in terms of sex, with males significantly under-represented.

In pursuing the comparative strategies designed to examine the social impact of change, two data sets will be extensively utilized: sample surveys of Edmonton (1979) and Fort McMurray (1969). The presentation of demographic factors that follows also utilizes other northern communities as comparison points for Fort McMurray.

3. DEMOGRAPHIC FACTORS IN SOCIAL IMPACT

3.1 INTRODUCTION

What kinds of people have come to Fort McMurray and stayed? What factors are associated with the length of time they have stayed? These are necessary questions since it is the social composition of the population that is of importance in a discussion of the social impact of development (Porteous 1976; Riffel 1975; Larson 1979; Summers et al. 1976).

The answers to these questions are important to the operations of government, particularly social support programs (Kalbach and McVey 1979). People at different stages of the life cycle put different demands on services (e.g., schools for the young, medical care for the aged). Population composition is also important to the development of demand in the local economy since different kinds of people consume different products and services. It may in part reflect the hiring policies of major industries in the area. The kinds of people who live there may have a crucial effect on community stability and the quality of life (Nickels 1976; Matthiasson 1970, 1971), and this clearly mediates the impact of development on human adjustment. In brief, the study of population composition can help to pinpoint the social location of possible positive and negative impacts of development.

Several broad hypotheses direct this investigation. First, how accurate is the stereotypical description (Lucas 1971) of resource community populations as dominated by young, male, single adults, who come only to make their fortune and then leave? The study results suggest that such a portrait is overdrawn. It may more accurately describe boom construction phases in the development of resource towns, or resource towns that rely heavily on semi-skilled, highly transitory labour (Riffel 1975; Summers et al. 1976; Van Dyke and Loberg 1978). It appears to be inaccurate in several respects as a description of Fort McMurray in 1979. The population is much more heterogeneous than such stereotypes suggest.

Indeed, in some ways, Fort McMurray does not appear to be vastly different from other cities of 25 000. These similarities and differences (place comparisons) form a continuing theme throughout this report.

Related to problems of population composition are problems of migration and population stability. These form our second concern. At the community level, has rapid growth meant decreasing stability? What has happened over the past decade and what sort of community has emerged? Many of the social problems experienced during and after rapid development have been laid at the doorstep of community instability. How long have people stayed and what are their intentions? How has this changed over time, and how does the present situation compare to that in other places?

Within the community, individual differences in length of residence are examined. Since this variable is used throughout the report as an indication of length of exposure to whatever social impacts are present in Fort McMurray, its determinants must first be analyzed. In this analysis, the emphasis is on factors that describe the backgrounds of respondents in the 1979 AOSERP survey: (1) demographic factors such as age, sex, marital status and household size; (2) place of origin factors such as where people grew up, whether they immigrated to Canada, and whether they came from urban centres or smaller places. Finally, stability differences between sub-communities within Fort McMurray, between housing types, and between housing tenures are also examined.

3.2 POPULATION GROWTH

Population growth in Fort McMurray between 1951 and 1978 is portrayed in Figure 3 (New Town of Fort McMurray 1979). For the period 1951 to 1976, Fort McMurray's growth is compared to that of Grande Prairie, Yellowknife, and Whitehorse (Buse 1978). Grande Prairie, Alberta, is a regional service centre in the Peace River region of northwestern Alberta. Yellowknife is the capital of the Northwest Territories, and Whitehorse is the capital of the Yukon

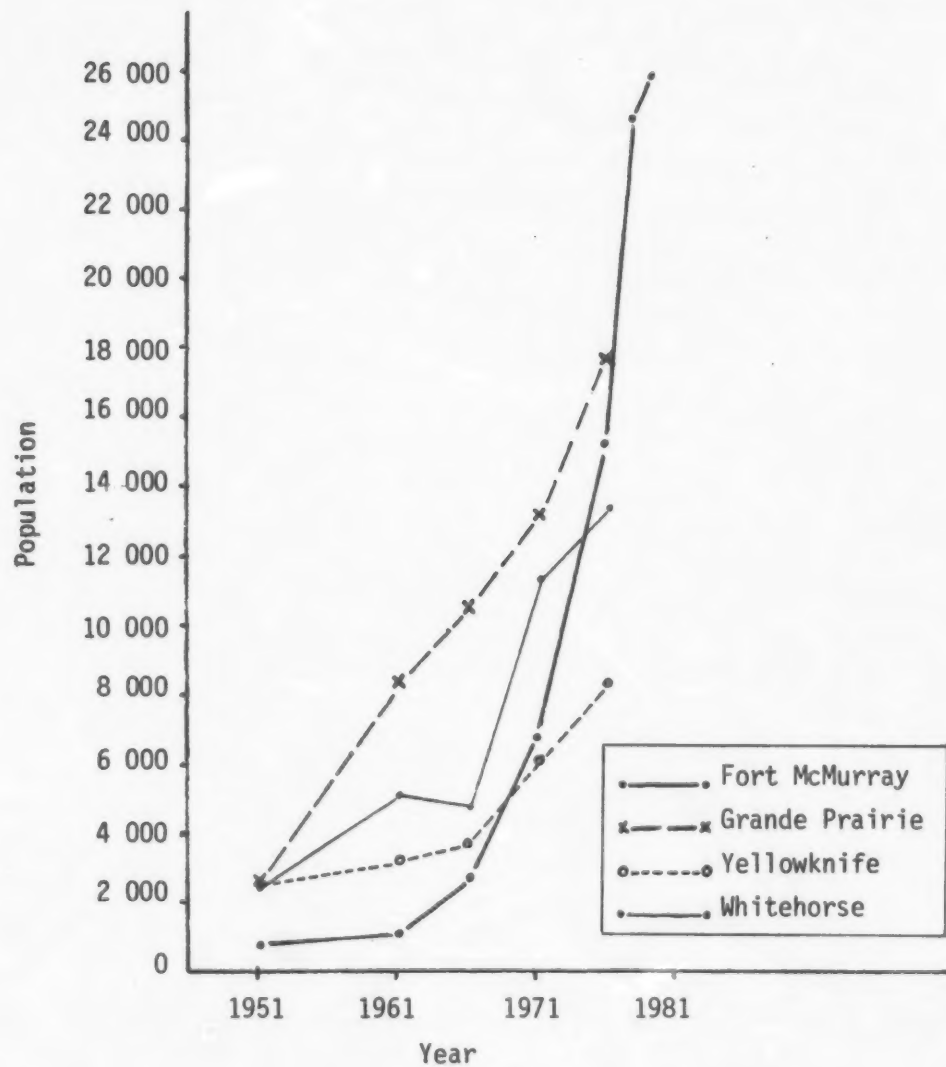


Figure 3. Population growth in northern communities: 1951 to 1978.

and a federal government centre. These communities in the Canadian northwest give some perspective to demographic changes in Fort McMurray.

Fort McMurray's population grew at an average of about 2.8% a year between 1951 and 1961. Between 1963 and 1968 as the Suncor project was under construction, population grew at an average of 38.5% per year. Between 1968 and 1972, population growth leveled to 4.3% as Suncor went into production. Growth again increased to an average of 21.4% per annum during the construction of Syncrude (1973 to 1978) and thereafter it appears to have decreased once again to 5% in 1979. Population growth cycles with construction, but it is notable that even in non-construction periods growth has been considerable. Indeed, the full impact of construction of the oil sands plants is grossly underestimated by reports of the population growth within Fort McMurray since those living on the construction site are not included.

Even compared to other rapidly growing communities in the Canadian northwest, Fort McMurray's population growth is notable. While it started out (in 1951) much smaller than any of these places and remained so through the early 1960's, it now is considerably larger than any of the others, and promises to become even larger (Hobart et al. 1979).

3.3 POPULATION COMPOSITION

3.3.1 Age and Sex Structure

One of the most fundamental demographic characteristics of a population is its age and sex structure. It reflects prior birth, death and, particularly in the case of Fort McMurray, migration. It also influences these population changes in the future and has considerable significance for both economic and social goals.

Fort McMurray's population has a clear predominance of males. However, the proportion of males is not as high as is popularly assumed. The 1979 Municipal census reports a population that is 52.9% male. This translates into a sex ratio (males per 100 females) of about 112. In 1971, all urban places in Canada with populations between 10 000 and 29 999 had a sex ratio of 99 (Kalbach and McVey 1979). Canada as a whole had that same ratio in 1976, a drop from 100 in 1971.

The sex ratio is high for Fort McMurray, but it is not extreme when compared to figures for rural Canada (116 in 1971), or to the sex ratios in other northwestern Canadian communities. According to Statistics Canada, Whitehorse in 1976 had a sex ratio of about 112 (Buse 1978). For Yellowknife the figure was 110 and for Grande Prairie it was about 100. For the same period (1976), the sex ratio for Fort McMurray was about 109. Despite this figure's coincidence with the height of Syncrude construction, it should be remembered that most of the primarily male construction force lived on the construction site 4 km north of Fort McMurray. Despite the end of construction in 1978, the sex ratio for 1979 (112) was higher than for 1976 (109).

Fort McMurray also has a relatively young population. In 1979 the median age in Fort McMurray was 22.8 (1979 Municipal Census). In 1976, 45.5% of the population of Fort McMurray was 19 years of age or younger, compared to 37.9% for Alberta and 35.8% for Canada. According to the 1979 Municipal Census, the proportion below 30 had fallen to 43%. Between 1976 and 1979 the broad age group 20 to 29 increased from 24.2% to 26.6% of the population, compared to 19.1% for Alberta and 17.9% for Canada (1976). The 30 to 44 age group increased from 20.3% to 23.3% of the population compared to 18.2% for Alberta and 18.2% for Canada (1976). Those over 44 years of age decreased from 7.4% to 7% of the population. Compared to Alberta (24.8%) and Canada (28%), there were relatively few elderly people living in Fort McMurray.

Between 1976 and 1979, each of the 5 year cohorts under 14 years of age decreased in their proportionate representation in the population. The age group 15 to 19 stayed proportionately the same, and the 5 year age groups between 20 and 44 all increased proportionately. Those in the broad age group over 44 decreased slightly. In short, as Syncrude passed from construction to maintenance, the age structure of Fort McMurray became more homogeneous. There was a lower proportion of the young and the relatively old.

In this situation, overall dependency ratios (population 0 to 14 plus population 65 and over divided by the population 15 to 64) are somewhat misleading. In 1978, young dependency (population 0 to 14 divided by population 15 to 64) was 52.0 compared to 39.1 for Canada as a whole (Kalbach and McVey 1979:171). Old dependency (population over 64 divided by population 15 to 64) was 0.7 for Fort McMurray compared to 13.3 for Canada. Young dependency was still relatively high and old dependency was relatively low. While the overall dependency ratios for Fort McMurray (52.7 in 1978) and for Canada (52.3 in 1976) are remarkably similar, they disguise age differences in the population that imply vastly different demands for services and institutional facilities. For example, high young dependency ratios may indicate considerable demand for such services as schools (including day care), pediatric health care, and different forms of recreational facilities that would be used by older people.

Fort McMurray in 1976 had a relatively young population, but not one that was particularly unbalanced in terms of its sex ratio. As the comparison with other northwestern Canadian communities illustrates (Table 4), Fort McMurray showed a high proportion of both young males and young females (20 to 29 years old). The proportion of middle-aged (20 to 34 years old) males and females was also higher than that in any of the other communities. Perhaps the most dramatic display of this age difference was for

Table 4. Percentages within age cohorts by sex: northwestern Canadian communities (1976).^a

Age	Yellowknife			Grande Prairie		
	M	F	Total	M	F	Total
20 to 29	40.7	44.4	42.5	39.5	38.9	39.2
30 to 44	35.9	35.1	35.6	29.8	28.4	29.1
45+	23.3	20.5	22.0	30.7	32.7	31.7
% Total	53.0	47.0		50.3	49.7	
N	2 615	2 320	4 935	5 230	5 170	10 400

Age	Whitehorse			Fort McMurray		
	M	F	Total	M	F	Total
20 to 29	36.5	40.3	38.2	44.9	49.2	46.9
30 to 44	36.0	35.2	35.6	42.3	35.7	39.2
45+	27.5	24.5	26.1	12.8	15.1	13.9
% Total	53.7	46.3		52.7	47.3	
N	4 375	3 775	8 150	4 347	3 895	8 242

^a Source: Buse (1978) from Statistics Canada Publications.

those over 44. About 14% of the population over 20 in Fort McMurray were over 44, while the other communities ranged from 22% (Yellowknife) to 32% (Grande Prairie).

3.3.2 Marital Status

Inter-censal results (1976) report 7125 married persons in Fort McMurray, 86.4% of the population over 19 and 74.1% of the population over 14. Only 410 people were classified as widowed (N = 110) or divorced (N = 300) in the 1976 census, and they constituted 4.3% of those over 14 years of age. In the 1979 AOSERP survey, 17.7% of the 430 respondents reported that they had never married. Two-thirds described themselves as currently married, 1.6% reported that they were married but separated, and 8.6% classified themselves as living together with someone of the opposite sex (common-law). About 4% were divorced and 1.4% were widowed. Combining the three categories of presently married, married but separated, and common-law gives a total of 76.9% of the sample.

As Buse (1978) reports from Statistics Canada results, a relatively high 75.3% of the population 15 and over in Fort McMurray were married, even in 1971. This was before Syncrude, hoping to reduce turnover and increase labour productivity, introduced its hiring policy favouring the married. The proportion married had increased from 63.3% (of population 15 years of age or older) in 1961 to 69.7% in 1966 and 75.3% in 1971. These changes occurred over the period when Suncor was built (1963 to 1968).

The proportion married of the 1971 population 15 years of age or over was higher in Fort McMurray than in any of the three northwestern Canadian communities that have been used as comparisons. Yellowknife had 44.2% married, Whitehorse had 69%, and Grande Prairie had 67.4%. It is interesting to note that Doyle et al. (1976) describe "mature resource communities" (Whitehorse, La Ronge, Lynne Lake) as having over 75% married (Larson 1979:55). While this figure would seem to be somewhat high, Fort McMurray has exhibited such a "marriage rate" for some time. If, as a number

of authors note (Doyle et al. 1976; Larson 1979), a higher proportion of married adults generates a more stable community, then Fort McMurray would appear to be relatively fortunate in this regard.

Gross marital status differences by age and sex for the 1979 AOSERP sample are reported in Table 5. Emphasizing living arrangements rather than legal status, married was defined to include common-law, but to exclude separated. Single includes all others. Overall, as age increased, the proportion of married also increased. This trend reversed in the over 44 age group, a change that is more dramatic for females than for males.

The proportion of married males was lower at all ages than the proportion of married females. This difference between males and females was largest for the youngest cohort (17 to 24 years of age). It was smallest for the 25 to 29 age group and larger again in each successively older age group after that.

3.3.3 Social Origin

3.3.3.1 Religious composition. Comparison of Fort McMurray's religious composition with that of other northwestern Canadian growth communities (Table 6) shows that it has similar heterogeneity to that of Grande Prairie and Yellowknife, and somewhat less heterogeneity than Whitehorse. In 1971, the two largest denominations in Fort McMurray were Roman Catholic (39%) and United (21%). While Roman Catholics formed a similar portion of the population of Yellowknife at the same period (39%), Grande Prairie (24%) and Whitehorse had somewhat smaller proportions. United formed the largest denomination in Grande Prairie (28%) and the second largest in Yellowknife. Anglicans (22%) were the second largest denomination in Whitehorse, and United (20%) were a close third. In all three other communities, Anglicans represented the third largest group. In the 1971 census, Roman Catholics formed 24% of the Alberta population and those giving a preference of United formed

Table 5. Marital status by age and sex: Fort McMurray, 1979.

Age ^a	Female			Male		
	%S ^b	%M	Total	%S	%M	Total
17 to 24	39.3	60.7	61	62.8	37.2	43
25 to 29	21.5	78.5	65	24.4	75.6	41
30 to 34	11.1	88.9	45	17.8	82.2	45
34 to 44	2.6	97.4	37	11.4	88.6	44
45 to 71	35.0	65.0	20	21.7	78.3	23
Total N	51	179	230	55	141	196
%	22.2	77.8		28.1	71.9	

^a Ages in the sample ranged from 17 to 71. Two males and two females did not give information on year of birth.

^b S = Single, M = Married.

Table 6. Religious affiliation: community comparisons.

Religious Affiliation	Fort McMurray		Grande Prairie	Yellow- knife	White- horse
	1971 (%)	AOSERP 1979 (%)			
Anglican	14.3	12.3	9.9	14.7	21.9
Baptist	4.2	3.5	4.5	2.1	4.9
Lutheran	3.7	4.7	9.8	4.5	5.5
Pentecostal	1.2	2.6	1.3	2.1	1.2
Presbyterian	1.9	2.3	3.0	2.6	4.2
Roman Catholic	38.7	30.7	23.6	39.3	23.4
United	21.1	20.9	28.3	19.7	19.7
Other	9.8	12.6	11.0	8.3	9.9
No Religion N/R	5.2	10.5	8.6	6.8	10.4
N	6 880	430	13 125	6 175	11 205

28% (Kalbach and McVey 1979:229). Only in Whitehorse was the sum of these two denominations smaller than 52%.

The largest differences between the religious composition of respondents to the 1979 AOSERP survey and that of Fort McMurray in 1971 was in the percentage Roman Catholic. This appeared to decrease somewhat (from 39% to 31%). The "other" category and those declaring no religion were both higher in the 1979 survey. Along with the decrease in the proportion in the largest denomination, this reinforces the impression of greater religious pluralism.

3.3.3.2 Ethnicity. Survey results for father's ethnic origin also showed a wide diversity of backgrounds. The single largest group was from the British Isles. English, Scottish, and Irish form 37% of the sample. This is lower than their proportion in the 1971 population of Alberta (47%), or, for that matter, in Canada as a whole (44%).

In making this comparison it should be remembered that the census, unlike the 1979 AOSERP survey, did not allow "Canadian" as a response. This may account for part of the difference. The next largest groups are those who identified their fathers as "Canadian" (18%) or "French" (9%). About 10% identified other European ethnicities besides British. A further 4% were Scandinavian and about 6% were Eastern European or Russian. Native Indians and Metis formed 4% of the sample (N = 16), a group too small to permit detailed analysis.

3.3.3.3 Immigrants. Census records indicate that the proportion of foreign-born in Fort McMurray has increased over the period 1961 to 1971 (Buse 1978). In 1961 they comprised 10% of the population, and this had risen to 13% by 1971. This was not particularly high since, for the Prairie region of Canada as a whole, 1971 census results showed 15% foreign born (Kalbach and McVey 1979:187).

In the 1979 AOSERP survey, 17% of the respondents reported that they had migrated to Canada. A further 18% reported that their parents had immigrated to Canada, but that they had not. About 61% were born in Canada of parents born in Canada, and about 4% were Native Indian or Metis. Of those respondents who had immigrated to Canada (N = 76), 22% came before 1961, 25% came between 1961 and 1971, and 53% came after 1971.

3.3.3.4 Place of origin. Respondents to the 1979 AOSERP survey were about as likely to have grown up in a small town (42%) as in a city (44%). Those who grew up in a rural area were in a distinct minority (14%). About 30% of the sample reported that they grew up in Alberta. A further 20% had grown up in one of the other western Canadian provinces (Table 7). Those who grew up in Ontario comprised 17% of the sample while respondents who had grown up in Quebec (5%) or in Canada's Maritime region (11%) made up the remainder of the sample.

Before moving to Fort McMurray, a majority of the respondents (52%) lived in a city. Those who lived in towns comprised 41% of the sample and 7% came from rural areas. About 41% of the sample were residents of Alberta before moving to Fort McMurray, a percentage that may have been increased slightly by Syncrude's practice of using Edmonton as a staging area in hiring. Beyond this, a further 22% were from one of the other Western Provinces and about 15% were from Ontario. Roughly 4% came from Quebec and about 9% came from the Maritime region (mostly from Newfoundland). Those that moved directly to Fort McMurray from another country made up about 2%.

3.4 GEOGRAPHIC MOBILITY

3.4.1 Introduction

Geographic mobility is necessarily one of the major factors involved in population change in growth communities. Migration is also an important cause of social and economic change (Shaw 1975),

Table 7. Region of origin: Fort McMurray, 1979.

Region	While Growing Up (%)	Before Fort McMurray (%)
Alberta	30.2	41.2
Other Prairie Provinces and B.C.	18.1	15.8
Ontario	17.2	15.1
Quebec	4.9	3.7
Maritime Provinces	11.2	9.8
Other	14.9	7.7
N.R./N.A. ^a	1.1	0.9

^a Includes three respondents who grew up in Fort McMurray.

particularly for family life (Larson 1979). However, in attempting to assess the level of geographic mobility that accompanies the industrial development of resource communities, it is important to remember that geographic mobility is a way of life for many in Canada (Duhors et al. 1972; Stone and Fletcher 1977). For example, 17% of the Fort McMurray sample were first generation immigrants and a further 18% were second generation immigrants (through at least one parent). This is not particularly atypical of Canada in general. In the 1971 census, 15% were classified as first generation immigrants, and 19% were classified as second generation immigrants (Kalbach and McVey 1979:179).

In the 1971 Canadian population 5 years of age or over, 53% were non-movers and 24% had moved only locally during the 5 years previous to the census. Relatively few people moved outside of the province (Kalbach and McVey 1979:126).

Young adults between the ages of 20 and 24 comprise a large share of the mobile Canadian population (Stone 1969; Stone and Fletcher 1977). During the 1966 to 1971 period, 19% of husband-wife families between the ages of 24 and 34 had not moved, but only about half of those who had moved did so outside the municipality. Similar patterns were observed for single parent families (Larson 1979:16). The Canadian population has been highly mobile. However, even allowing for their youthfulness, the population of Fort McMurray shows much higher mobility.

3.4.2. Number of Moves: Survey Results

The rate of geographic mobility in the population of Fort McMurray is indicated by the number of moves between different places in the 5 years previous to the survey (1974 to 1979). Among the 430 respondents, the average number of such moves was 2.04 with a standard deviation of 2.67. Non-migrants comprised 18% of the sample and 37% had moved only once. A further 30% had moved two or three times and 15% had moved four or more times.

This represents a high level of geographic mobility, even in a generally highly mobile population.

Ignoring return mobility, all but one of these moves would have occurred before the respondent moved to Fort McMurray. Over 45% of the AOSERP sample had moved once or more during the 1974 to 1979 period, before coming to Fort McMurray. People who moved to Fort McMurray and stayed (at least until June 1979) were relatively highly mobile before they came.

In looking at differentials (selectivity) in migration within the Fort McMurray sample, the emphasis is on characteristics of respondents prior to moving to Fort McMurray. This includes the demographic and place of origin differences described above. It also includes education, since most respondents would have completed their education before they migrated. Again it must be stressed that the 1979 AOSERP survey includes only stayers. Those who had come to Fort McMurray and left before the interview period were not included in the sampled population. This limitation has its parallels in the figures for Canada reported above, since the census does not include individuals who emigrated (Stone and Fletcher 1977).

Urban residents are generally more mobile than rural residents (Shaw 1975). In the 1979 AOSERP sample, those who grew up in an urban area had moved an average of 2.46 times in the past five years. By contrast, those who grew up in a rural or small town averaged 1.73 moves. While this difference is significant at the 0.01 level, respondents who moved to Fort McMurray directly from an urban place did not exhibit higher mobility (1.95 moves versus 2.17 moves for those from smaller places).

In line with the "mobility breeds mobility" hypothesis (Shaw 1975), immigrants generally are more mobile than non-immigrants (Stone and Fletcher 1977). There was no evidence of a significant difference within the population of Fort McMurray for either first generation immigrants (averaging 2.08 moves) or second generation immigrants (averaging 1.7 moves). However, there was some evidence for part of what we might label the "rolling-stone" hypothesis (Jackson and Poushinsky 1971; Riffel 1976; Matthiasson 1970;

MacMillan et al. 1974). This refers to the young, single males who move from resource town to resource town. Those who had lived in other resource communities averaged 2.83 moves compared to 1.69 moves for those who had not. This difference would occur by chance less than one time in 100 in a sample such as ours.

Stone and Fletcher (1977) and McVey (1978) also find for the general population that those with higher educations are more mobile, a finding which is replicated here. Sample results showed that the average number of moves increased from 1.58 for those with nine or fewer years of education, to 2.38 for those with 13 to 15 years of education. In the highest education level, more than 15 years, the average mobility was lower (1.91 moves). These differences were not large enough to be significant at the 0.05 level.

Those who moved to Fort McMurray from Alberta averaged fewer moves (1.69) than did those from other parts of Canada (2.38). This supports ($p < 0.05$) the hypothesis that distance of move is related to amount of mobility (Shaw 1975). This may be related to earlier hiring in local labour markets. Similarly, the negative association of age and migration shown in Canadian census results (George 1970, 1976; Stone 1969; Stone and Fletcher 1977; McVey 1978; Kalbach and McVey 1979) is strong and linear in the survey results for Fort McMurray. Average number of moves decreased linearly from 2.97 for those 17 to 24 years of age to 1.12 for those over 44. Smaller non-significant differentials by sex (males 2.29, females 1.82) also correspond to the direction of differences observed in general populations (Shaw 1975). So too do differences in marital status (Grant and Vandercamp 1976; George 1970) and household size (Larson 1979). Single respondents reported an average of 2.83 moves in the past 5 years compared to 1.78 moves for married respondents (significant at the 0.01 level). Household size showed significant linear effects ($p < 0.05$) with 2.88 moves for one person households and 1.74 for those with four or more people.

3.4.3 Summary

Differences in geographic mobility within the adult population of Fort McMurray that were similar to, but higher than, those observed in the population at large were encountered. As expected, rates of mobility were higher for all types of people in Fort McMurray than they were for the rest of Canada. Among those that moved to Fort McMurray and stayed, higher mobility was observed for residents of urban backgrounds (during childhood but not previous to moving to Fort McMurray), those who moved to Fort McMurray from outside Alberta, and those who had previously lived in other resource communities. In the past, the single were more mobile than the married, and both age and household size were inversely correlated with geographic mobility. The older the respondent and the larger his or her household, the lower the mobility reported in the recent past.

3.5 STABILITY: LENGTH OF RESIDENCE IN FORT MCMURRAY

3.5.1 Introduction

Population stability, as indicated by length of residence in the community, is negatively related to both geographic mobility and turnover. People who have moved often in the past are generally likely to do so in the future, and the longer a person resides in a particular community, the less likely he or she is to leave (Jackson and Poushinsky 1971; MacMillan et al. 1974; Shaw 1975; Fernandez and Dillman 1979). The more people have moved in the past 5 years, the less time they have lived in Fort McMurray. As predicted, the correlation is negative ($r = -0.300$) and significant at the 0.01 level.

As already pointed out, the problem in linking stability with turnover is far more acute. The sample of residents cannot estimate turnover, since it omits those who have left. The analysis of selectivity in migration will therefore remain incomplete until movers as well as stayers are studied. This awaits future panel studies planned for the 1979 sample.

With this caveat in mind, analysis at the community level is limited to brief comments on the 1979 Municipal Census results, and comparisons of stability from sample estimates across time and place. At the individual level, the analysis will examine differences in stability within the sample of Fort McMurray residents. Paralleling this analysis of past geographic mobility, hypotheses are based on results for both wider populations and previous studies of resource communities.

Age has been found to be positively related to stability in both the general population (Kalbach and McVey 1979; Shaw 1975; Stone and Fletcher 1977; George 1970) and in resource communities (Summers et al. 1974; MacMillan et al. 1974; Nickels 1976; Jackson and Poushinsky 1971). Age differences are usually explained by youth's greater adaptability and their lack of constraints by social and economic ties (Shaw 1975). These same sources identify people more likely to be short-term residents as: (1) single; (2) males; (3) who moved frequently before (immigrants, those who moved a lot during childhood, who lived in other isolated resource communities); (4) who have smaller households; (5) who came from urban backgrounds; (6) who came from outside the province; (7) who have lower levels of education; and (8) who have unfavourable housing tenure (renters) and housing type (anything but single family housing).

An additional factor which may be of importance is the difference between sub-communities within Fort McMurray (Van Dyke and Loberg 1978). Waterways and Lower Townsite were developed prior to the 1970's and may exhibit greater stability simply for that reason. By the same reasoning, the newer communities of Beacon Hill, Gregoire Park, Abasand Heights, and Thickwood Heights all might be expected to show somewhat lower stability. This hypothesis that older communities would show greater stability is general in nature.

3.5.2 Population Stability

In the discussion of geographic mobility, it was noted that residents of Fort McMurray were highly mobile, even in a general Canadian population that was fairly mobile itself. An analysis of length of residence in Fort McMurray showed similar results. Compared to Edmonton, fewer people had lived long in Fort McMurray. However, the proportion of long-term residents appeared to have increased between 1969 and 1979.

Respondents to the 1979 AOSERP survey reported an average of 3.2 years residence in Fort McMurray. The distribution of years resident was positively skewed and fairly heterogeneous (standard deviation = 3.9). Of the 418 respondents who indicated when they had moved to Fort McMurray (Table 8), about 29% had come within the previous year (June 1978 to June 1979). About 42% had lived there less than two years. Most of the respondents had come since the peak of Syncrude construction during 1976 and 1977. Those that had come between 1975 and mid-1977 comprised a further 26% of the sample. About 15% had come before 1975 but after Suncor was built. Only 7% had moved to Fort McMurray before Matthiasson's survey in 1969.

A comparison with results from Matthiasson's survey (Table 8), shows a higher proportion of long-term residents in 1979 than in 1969. In 1979 over 22% of the sample had been in Fort McMurray over 4.5 years compared to 12% in 1969. In both cases, this cutting point predates the height of construction. However, the largest difference over time is not found for this group. Rather, it was the proportion who had been in Fort McMurray between 4.5 and 10 years that had more than tripled. For both surveys, these residents had come before the construction booms, but in 1979 a higher proportion had stayed. This may in part be attributable to the larger population base and lower rate of growth in the latter period.

In the 1969 survey, 36% had come during the Suncor construction and stayed. About 27% of the 1979 residents had come during a similar time (1974 to 1977). Even if this does reflect the

Table 8. Length of residence in Fort McMurray (1969, 1979) and Edmonton (1979).

City	Years Resident ^a					N
	< 0.33 (%)	0.33-1 (%)	1-2 (%)	2-4.5 (%)	4.5-10 (%)	>10 (%)
Fort McMurray						
1969	15.0	13.2	23.3	36.0	4.9	7.6
1979	13.4	15.8	23.0	25.6	15.3	6.9
Edmonton						
1979	0.7	3.6	4.1	13.7	14.1	63.8
						439

59

^a Categories were matched to those used by Matthiasson in his 1969 research, since he collected only ordinal data. Edmonton results were taken from the 1979 EAS.

larger base and slower population growth of the latter period, it also may signal smaller negative effects associated with the construction boom itself. However, given the problems with sampling and measurement in Matthiasson's 1969 survey, it would be prudent to be cautious concerning a 10% shift in the samples between adjacent categories in Matthiasson's ordinal responses.

The proportion of short term residents was similar in both the 1969 and 1979 surveys. About 42% of the respondents had lived in the community for less than 2 years. While there was some indication that the proportion of long-term residents had increased over the decade, there were proportionately no fewer newcomers.

Corroborating evidence for the 1979 survey results are reported by the New Town of Fort McMurray 1979 Municipal Census. Of those not born in Fort McMurray (20 509 out of 25 802, the difference presumably mostly young children), 12% had arrived in 1979. The 13% estimated by the AOSERP survey is reasonably close to this (Table 8). About 78% of adults surveyed in 1979 had arrived since 1974 compared to 77% of all movers in the census.

Comparisons with Edmonton illustrate how low these stability levels still are (Table 8). The 1979 EAS reported that only about 8% of the adult residents of Edmonton had lived there less than 2 years. This is roughly one-sixth the rate for Fort McMurray. At the other extreme, the EAS reported that proportionately nine times as many residents had lived in Edmonton 10 years or more. Stability may have increased in Fort McMurray, but it is still relatively low. This is particularly so since both our survey and the Municipal censuses do not include results for the construction camps established at the Syncrude site.

3.5.3. Mobility Intentions

Respondents to the 1979 AOSERP survey were asked how long they intended to stay when they first came to Fort McMurray. The

results (Table 9) show that about 42% intended to stay permanently. However, 38% indicated that they had intended to stay 2 years or less.

When compared with the parameters identified by Matthiasson in 1969, a slightly higher proportion (almost 50%) indicating that they had intended to settle relatively permanently are found (Table 9). Also, a somewhat smaller proportion of the respondents to the 1969 survey (25% compared to 38% for 1979) indicated that they had originally expected to live in Fort McMurray only 2 years or less. With the development of Syncrude and considerable growth in the community, residents reported that they did not expect to stay as long when they first arrived.

Comparison of respondents future mobility intentions at the time of the interview (1969 and 1979) yields differences that are quite striking. In Matthiasson's 1969 survey over 25% of the sample reported that they planned to leave Fort McMurray within one year. Less than 10% of the 1979 AOSERP sample planned to leave that soon. At the other extreme, the proportion of those who indicated that they had settled relatively permanently had more than doubled between 1969 and 1979. Those who said that they presently intended to stay 10 years or more had increased from 23% in 1969 to 48% in 1979.

Over the 1969 to 1979 decade, intentions to stay generally showed increase in stability that paralleled results for behaviour (length of residence). However, it would be a mistake to infer from this that those who had stayed longer in the past intended to stay longer in the future. The correlation between present intentions and length of past stay (both measured in years) was 0.018 ($p > 0.05$). However, this is hardly an adequate "test" of future intentions, since the present survey interviewed only stayers.

Table 9. Intentions to stay in Fort McMurray (1969, 1979).

	Years Planned to Stay ^a					N
	<1 (%)	1-2 (%)	3-4 (%)	5-10 (%)	10+ (%)	
On Arrival						
1969	12.4	12.2	15.7	10.2	49.4	451
1979	18.4	19.7	8.1	13.1	41.7	381
At Interview						
1969	27.9	14.4	18.2	16.7	22.9	402
1979	9.6	8.2	22.1	11.7	48.4	366

^a Categories are matched to Matthiasson's ordinal responses. 1979 responses were rounded to the nearest year. The 10+ category includes "forever", "as long as there is work", "for good", "always", etc.

3.5.4 Differences in Stability Within Fort McMurray

3.5.4.1 Social background and demographic factors. Growing up in an urban area was related to length of residence in Fort McMurray. As predicted (Section 3.5.1), those from urban backgrounds were less stable ($p < 0.01$), averaging 2.54 years of residence. This compared to 3.72 years for those from rural and small town backgrounds. There were not significant stability differences for respondents who had immigrated themselves, or for those whose parents had immigrated to Canada. Previous residence in another resource community also did not result in a significantly different length of residence in Fort McMurray. The 30% of the sample who reported that they had lived in other "isolated resource communities" averaged 2.69 years and others averaged 3.42 years ($p > 0.05$).

Higher education was hypothesized to be associated with higher mobility and shorter length of residence. There were some trends in this direction but, again, differences were not significant at the 0.05 level. There may have been more jobs for the better educated once Syncrude reached its "maintenance phase", but this did not produce significant differences overall. Those with the highest amount of education (over 15 years) averaged the shortest length of residence (2.86 years), while those with grade nine or less averaged 4.12 years.

It was predicted that those who came from outside Alberta would have lived in Fort McMurray a shorter time. This may reflect initial hiring in local (provincial) labour markets. Excluding direct immigrants, those who came from Alberta had lived in Fort McMurray an average of 4.62 years. Those who came from elsewhere in Canada had lived in Fort McMurray an average of 2.11 years ($p < 0.01$). However, having lived in a city prior to coming to Fort McMurray did not have significant effects on reported stability.

As predicted, age showed significant linear effects with averages ranging from 1.84 years for the 17 to 24 age group, to

6.48 years for those over 44. The older the respondent, the longer he or she had lived in Fort McMurray.

Contrary to what is commonly reported in the migration literature (Shaw 1975), males in the sample were not significantly less stable than females ($p > 0.05$), although differences were in the direction predicted. Males averaged 2.87 years residence and females averaged 3.46 years. Neither were there significant marital status differences in length of residence in Fort McMurray. Indeed, the married (including common-law) averaged 3.16 years, while the single people averaged 3.28 years. The lowest stability was observed for single person household (2.21 years) and the highest stability was observed for households with five or more persons (3.54 years). These differences were not significant at the 0.05 level.

3.5.4.2 Area of residence, house type, and housing tenure. There were significant differences in stability between sub-communities within Fort McMurray ($F = 7.56$; $p < 0.001$). Both Lower Town ($\bar{x} = 3.79$ years) and Waterways ($\bar{x} = 7.36$ years) had higher stability than the newer areas. Beacon Hill was close behind, averaging 3.56 years of residence. Respondents from Gregoire Park ($\bar{x} = 2.94$ years), Thickwood Heights ($\bar{x} = 2.31$ years), and Abasand Heights ($\bar{x} = 1.74$ years) had lower average length of residence. A one-way analysis of variance showed that differences between areas accounted for 8.4% of the variation in years resident.

Following previous research on resource communities (Larson 1979), it was predicted that significant stability differences by house type and by housing tenure would be found. Survey results confirmed both predictions. Those living in single family housing averaged 4.99 years of residence compared to 3.70 for mobile homes, 1.81 years for apartment dwellers, and 1.94 years for those who lived in other multiple family housing (duplexes, townhouses). A one-way analysis of variance showed that these differences were significant at the 0.01 level ($F = 18.87$) and explained 12% of the variation in length of residence.

Results for housing tenure (ownership status) were also as predicted with those holding ownership having longer average length of stay. Owners ($\bar{x} = 4.81$ years) were similar to those with lease purchase tenures ($\bar{x} = 4.13$ years). Together they averaged 4.59 years of residence. Renters and others averaged 2.03 years. This was significantly different from owners ($p < 0.01$) and explained about 11% of the variance.

Area of residence, house type, and housing tenure overlap somewhat in their explanation of length of stay. For example, some of the differences between areas may be due to differences between areas in housing type and tenure. Also, housing type and tenure are confounded, since no apartments are owned. In order to examine the independent effects of each of these factors, a multiple regression analysis was carried out. It used a series of binary variables to represent each category of area, house type, and housing tenure. The equation (Table 10) was constrained by omitting one binary variable for each set (apartment dwellers and residents of Lower Town). Tests of significance were made using these groups as the comparison.

Together, area, house type and housing tenure accounted for 25.5% of the variance in length of residence (Table 10). With area of residence and ownership controlled, those in single family housing averaged significantly longer residence (4.6 years) than those living in apartments in Lower Town. Controlling for area and housing tenure, those who lived in mobile homes and multiple family housing other than apartments had stayed about the same length of time as apartment dwellers. The biggest difference by house type was between those in single family housing and all others. The largest adjustment through the use of controls for area and housing tenure was for mobile home dwellers. The apparent difference observed in mean length of residence between those in mobile homes and those in multiple family housing was largely accounted for by differences in area and housing tenure.

Table 10. Multiple regression equation: area of residence, house type, and housing tenure as determinants of length of residence in Fort McMurray.

VARIABLE	B	St. error	F
Single	2.323	0.540	18.51 ^a
Other Multiple	0.821	0.535	2.36
Mobile Homes	0.475	0.612	0.60
Waterways	3.205	0.954	11.29 ^a
Beacon Hill	-1.455	0.662	4.84 ^a
Gregoire	-1.432	0.687	4.35 ^a
Thickwood Heights	-2.859	0.506	31.91 ^a
Abasand Heights	-1.757	0.578	9.24 ^a
Own	2.273	0.396	32.87 ^a
Constant	2.274		
$R^2 = 0.255$			$F = 15.55$
			$N = 418$

^a Effects are significant at the 0.05 level.

Housing tenure had significant effects controlling for other factors (Table 10). Owners were resident for 2.3 years longer. This is similar to the observed difference between owners ($\bar{x}$ = 4.6 years) and renters ($\bar{x}$ = 2.0 years). The controls introduced in Table 10 had relatively little effect on the magnitude of this difference. No matter where you lived or what you owned, owning housing meant considerably longer residence in Fort McMurray.

With controls for house type and tenure, all the sub-communities within Fort McMurray were significantly different from Lower Town (Table 10). After adjusting for these factors, residents of Waterways had been there over 3 years longer than residents of Lower Town. Those who lived in Gregoire Park, Beacon Hill, Abasand Heights, and Thickwood Heights had been in Fort McMurray a significantly shorter length of time than residents of Lower Town. Adjustments for house type and tenure reduced observed differences in mean length of residence between Beacon Hill, Gregoire Park, and Abasand Heights. Beacon Hill has a high proportion of owners and single family units. Gregoire Park is composed entirely of mobile homes. Abasand Heights has primarily multiple family dwellings. These differences and their consequences for the quality of housing will be explored further in the analysis of housing (Section 4).

3.5.4.3 Expanded multiple regression results. Significantly longer residence for those from small town or rural backgrounds and for residents who had come to Fort McMurray from Alberta has been observed. Also, older residents have lived longer in Fort McMurray. To assess the independent effects of those factors net of area and housing differences, the multiple regression analysis was expanded to include these place of origin and demographic variables. To be on the safe side, the other variables examined were also included even if they did not have significant bivariate effects. In order to simplify the presentation of this exploratory analysis, results are reported as a reduced form education (Table 11) generated through a step-wise regression procedure. The order in

Table 11. Multiple regression equation: determinants of years residence.

VARIABLE	B	St. error	Beta	F ^a	r
Age	0.130	0.020	0.313	41.76	0.335
From outside Alberta	-1.561	0.342	-0.195	20.77	-0.305
Waterways	4.485	0.849	0.222	27.94	0.214
Single house	1.683	0.391	0.190	18.51	0.302
Lower town	1.151	0.350	0.145	10.83	0.118
Own	1.605	0.381	0.187	17.80	0.292
Childhood stability	-0.090	0.025	-0.165	12.44	-0.005
Urban background	-0.338	0.110	-0.128	9.52	-0.176
Resource community	-0.830	0.363	-0.097	5.19	-0.085
Married	-0.882	0.399	-0.098	4.90	-0.024
Constant	1.501				
$R^2 = 0.375$		$F = 22.22$		$N = 381$	

^a All effects are significant at the 0.05 level.

which variables are listed indicates the order of their entry into the equation. Only cases with complete data on all variables were included in the analysis.

The effects of age on length of residence were altered little by the introduction of controls (Table 11). The simple regression coefficient was 0.139, while the partial regression coefficient (Table 11) was 0.130. In one sense such results are trivial, since older people have, by definition, been able to stay longer in Fort McMurray. Still, control for this effect of "opportunity" on length of residence is necessary as a control in examining the effects of other factors.

Residents who moved to Fort McMurray from outside Alberta had stayed a significantly shorter length of time, even when results were adjusted for other effects (Table 11). Put another way, people who came from outside Alberta had come about 1.56 years later than people who came from Alberta, all other things being equal. As noted above, this may reflect a tendency for those who are from outside Alberta to leave sooner, and it may reflect initial hiring (earlier arrival) from within the province. Without comparisons between movers and stayers, these different interpretations cannot be assessed.

Even after adjusting for demographic factors, social background, place of origin, and housing characteristics, significant differences between sub-communities within Fort McMurray remained. Residents of Waterways had lived considerably longer in Fort McMurray (about 4.5 years) than had residents of any of the newer communities (Gregoire Park, Beacon Hill, Abasand and Thickwood Heights), and somewhat longer than residents of Lower Town. They in turn had also lived in Fort McMurray longer (about 1.2 years) than residents of the newer communities. Such differences reflect the early development of Waterways (the original townsite), then Lower Town, and finally the other four areas above the flood plain. Differences in length of stay observed between

Beacon Hill, Gregoire Park, Thickwood and Abasand were largely a product of differences between these areas in housing type and tenure.

Ownership itself had independent positive effects on length of residence. Adjusting for other factors controlled in Table 11, owners had lived in Fort McMurray about 1.6 years longer than renters. The remaining significant effects (variables 7 to 10, Table 11) involved characteristics of respondents' origins, and one further demographic factor, marital status. What has been labelled "childhood stability" (years of residence in one place while growing up) had negative effects on length of residence in Fort McMurray. Past stability did not create present stability. Speculating somewhat, it may be that those who lived a long time in one place while growing up are more likely to have greater difficulty adjusting to a new community. They may be more likely to leave earlier, perhaps to return to their place of origin. Again, information on those who have moved away from Fort McMurray is needed so as to directly address such explanations.

Those from urban places averaged a shorter length of residence by 0.34 years. Those who had previously lived in an isolated resource community had lived in Fort McMurray about 0.83 years less than those who had not done so. Finally, married respondents had lived in the community about 0.88 years less than single respondents. However, it should be noted that the present survey under sampled places (e.g., the Syncrude Towers) where less stable singles are more likely to live. Less stable single males might be difficult to contact and thus be under-represented in the sample. In addition, even though these results find support in the general literature on migration (Shaw 1975), they may be brought about by either earlier arrival or later departure. Further information is necessary to document this situation.

3.6 SUMMARY

Fort McMurray's population growth has been very rapid, particularly during construction periods. When Suncor was built during 1963 to 1968, growth averaged 38% per year and, during 1973 to 1978 when Syncrude was built, growth averaged 21%. What began as a town of about 1200 in 1961 emerged as a city of 26 000 in 1979.

The population composition of Fort McMurray continues to show a sex ratio of about 112 males for every 100 females. However, this is not particularly high for developing northern communities. The population is relatively young even in those terms, with only 14% of those over 20 over the age of 44. One of the ways in which this is expressed is in high young dependency ratios and very low old dependency ratios. This implies considerable pressure on services for the young, although there is some sign that young dependency may be decreasing.

In these terms, Fort McMurray appears to fit the image that most southern Canadians have of the north. However, compared to other northern communities, and even to Canada as a whole, Fort McMurray has a relatively high percent married. About 77% of the 1979 sample of adults were married or living common-law. Even in 1971 the marriage rate was 75%.

Like other northern growth communities, Fort McMurray exhibits a relatively high heterogeneity in religious preference (primarily Roman Catholic, United, Anglican), and ethnicity (British plurality). The proportion of first generation immigrants has increased from about 10% in 1961 to about 17% in this sample. Again, this is not extreme for the prairie region of Canada, and it appears that few immigrants move directly to Fort McMurray. About 56% of the 1979 sample grew up in rural or small town areas, and former residents of Alberta made up 41% of the sample. Those who came from other western provinces comprised a further 22%.

As expected, Fort McMurray's population was found to have been highly mobile in the past. Those who had moved more during the past 5 years were from urban backgrounds and came from

outside Alberta. The young, the single, and those with smaller households were more mobile, but males were not significantly more mobile than females.

About half of the adult population were relative newcomers, having stayed in Fort McMurray less than 2 years. This was similar to the situation that existed in 1969 after the building of Suncor. While there were proportionately no fewer newcomers after the building of Syncrude, there appeared to be some shift in other parts of the distribution. There were proportionately fewer residents who had come during the construction boom (and stayed) than there were in 1969, and there was a larger proportion of the population that had been there right through the construction. In 1969, about 12% of the adult population had moved to Fort McMurray by the end of 1964. In 1979, about 22% of the adults sampled had moved to Fort McMurray by the end of 1974. Community stability appeared to have increased, but comparisons with Edmonton showed that Fort McMurray still had not developed a stable population.

When differences in length of residence within the community were examined, it was found that those from urban backgrounds, those who had previously lived in isolated resource communities, and those who came from outside Alberta all had lived in Fort McMurray a shorter time. As expected, older residents had lived there longer than younger residents. When all those factors and others were used in a multiple regression analysis, those who owned single family housing were found to have been in Fort McMurray about 1.7 years longer than those who had other types of housing. After adjusting for other differences, it was noted that those who owned their own homes had lived in Fort McMurray about 1.6 years longer. Housing type and tenure have a large influence on length of residence. Alternatively, the longer one stays in Fort McMurray the better one's chances of finding a single house. This housing mobility will be examined in more detail in a subsequent section.

Residents of Waterways and Lower Town had lived longer in Fort McMurray (4.5 and 1.2 years, respectively) than had residents of the newer areas. Differences in length of residence between Gregoire Park, Beacon Hill, Abasand, and Thickwood were largely accounted for by differences in house type and housing tenure.

Even after controlling for other factors, those who came from outside Alberta had arrived about 1.6 years later. Those who were older had lived in Fort McMurray longer (about 0.13 years per year of age). People with high stability of residence in their childhoods had lived in Fort McMurray a shorter time, as had those from urban backgrounds and those who had previously lived in isolated resource communities. These significant zero-order effects were also present when other demographic, locational, and housing factors were taken into account.

When other factors were controlled, the married proved to have lived in Fort McMurray for a significantly shorter period of time (0.9 years) than had the single. From the evidence examined here, it would appear that recruitment policies directed towards favouring married couples had not created a large change in the marriage rate. Nor did the married stay longer. However, without specific information concerning the employees involved in such a policy, and without a sample of movers as well as stayers, conclusions as to the efficacy of a policy of hiring married workers remain speculative. There are many other ways in which this may have a positive effect, not the least among them in higher labour productivity that is independent of length of stay.

Indeed, conclusions concerning population composition and population stability remain extremely tentative. First, Fort McMurray's population growth has clearly been different during the construction periods for both Suncor and Syncrude. The present survey looked at only one post-construction period and attempted to get some picture of change from available census data, a previous survey, and individual respondents' reconstruction of events. Results might well have been considerably different under conditions that reflected other phases of Fort McMurray's growth cycle.

Secondly, information is available only from those who came and stayed. Nothing is known about those who left. Speculations concerning turnover remain little more than speculation. Perhaps future data collection efforts will begin to fill this void.

4. HOUSING

4.1 INTRODUCTION

In a participant observation study of Fort McMurray carried out as Syncrude's construction reached its peak (1975 to 1976), researchers found themselves participating in a situation where "accommodation (was) totally unavailable, (and) we could find no area into which a trailer could be moved for six months" (Van Dyke and Loberg 1978:31). This was so despite the fact that 6000 construction workers were already being housed on the construction site outside of Fort McMurray.

From 1975 to 1977, as Syncrude construction reached its peak, housing was in very tight supply, and what was available was very expensive. Since then, the situation has improved somewhat. A three-bedroom mobile home that rented for \$600/mo in 1977 rented for \$450 to \$475 in 1979 (Nichols and Associates 1979:112). Housing costs remain high despite government and industry subsidies. According to Alberta Bureau of Statistics price surveys, housing in Fort McMurray continues to cost 18 to 21% more than it does in Edmonton (Nichols and Associates 1979:129).

Not only is expensive accommodation a continuing problem, but the very subsidies intended to defray this expense have themselves been a point of contention. Van Dyke and Loberg concluded that, at the time of their study (1976), the entire social structure of the community could be understood in terms of three categories: (1) single men accommodated in the camp; (2) people living in Fort McMurray who received subsidies from their employers; and (3) everybody else (Van Dyke and Loberg 1978:37).

There have obviously been difficulties in providing housing that suited the needs and circumstances of the population of Fort McMurray (Matthiasson 1970, 1971; Larson 1979). This is hardly an unusual problem in the construction of resource communities in northern Canada (Lucas 1971; Jackson and Poushinsky 1971; MacMillan et al. 1974; Porteous 1976; Bowles 1979). Neither that

fact nor an understanding of the difficulties involved in building in isolated areas, on difficult terrain, in inhospitable climates where housing construction has to compete with plant construction for labour makes the problem any less severe.

The problem is only exacerbated by the general importance of housing satisfaction for residential mobility (Speare 1974; Speare et al. 1975; Bach and Smith 1977) and its particular significance in northern resource communities (Jackson and Poushinsky 1971; MacMillan et al. 1974). Stability of residence is an important facet of community stability, and the quality of housing is an important factor in the quality of life (Campbell et al. 1976; Zehner 1977). Housing may be a critical part of a "negative feedback loop" which sees growth create dissatisfaction and instability in the community. The very subsidies intended to ameliorate the problem may have unanticipated negative consequences.

Since data from only a single point in time is available in the 1979 AOSERP survey, residential stability is treated as a past behaviour relevant to housing satisfaction. Examination of the effects of housing satisfaction on mobility must await future data collection. Without interviewing movers as well as stayers, it is impossible to examine such phenomena as "cumulative inertia", the hypothesis that the longer people stay, the less likely they are to move (McGinnis 1968; Morrison 1970; Shaw 1975).

This preliminary investigation looks at a number of questions. What has happened to housing stocks and shelter costs? Is residential stability low as people attempt to move into better accommodation? What are residents' perceptions of housing quality (PHQ)? How do cost, subsidies, and "objective" housing characteristics influence these perceptions, and how are they influenced by environmental and individual factors, subjective as well as objective?

4.2 HOUSING STOCKS

4.2.1 Growth in Housing Stocks

The size and composition of the housing stock in Fort McMurray has grown and changed drastically with development associated with the construction of Suncor and Syncrude. According to census results, in 1961 there were 301 dwelling units in Fort McMurray (Figure 4). By 1966, during the construction of Suncor, the housing stock had grown by 103% to 610 units. In 1971, 3 years after construction was completed, the housing stock had grown by 166% to 1620 units.

With Syncrude's construction underway, there was a further increase of 195% from 1971 to 1976, and a year after construction was completed (1979) there had been a further increase of 105% over 1976. As Nichols and Associates (1971:100) note, even if these figures are not entirely consistent, they serve to demonstrate the remarkable growth of housing stocks.

4.2.2 The Changing Housing Mix

The composition of housing stocks also changed dramatically over this period. During the peak construction period for Suncor (1966 to 1968), single detached dwellings comprised 69% of the total building permits issued (Nichols and Associates 1979). During 1974 to 1977, while Syncrude was being built, single detached dwellings accounted for 26% of all building permits. Apartments made up 13% of the total permits during 1966 to 1968, while they comprised 51% between 1974 and 1977. Even though figures for building permits omit mobile homes, the trend was clearly towards multiple family housing and higher residential densities.

Fort McMurray's 1961 housing mix had 91.7% single family dwellings and 8.3% semi-detached (Figure 5). The share of total housing accounted for by single detached dwellings fell to 61% in 1966, as mobile homes (23% of total stock), and apartments (7%) were introduced. Semi-detached dwellings remained roughly constant as a proportion of housing stocks through 1971. By then, Suncor

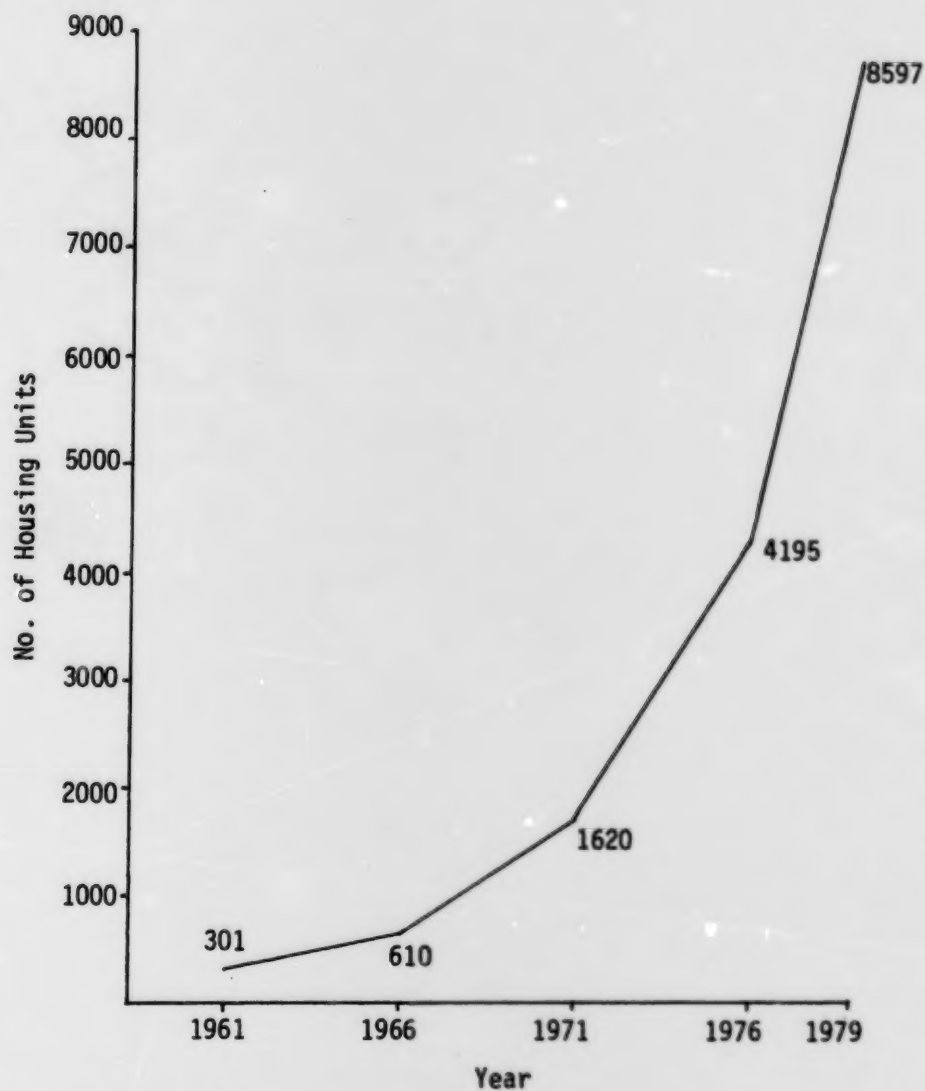


Figure 4. Size of housing stocks, 1961 to 1979. Adapted from Nichols and Associates (1979:101) for census results for 1961 to 1976, and New Town of Fort McMurray (1979:7).

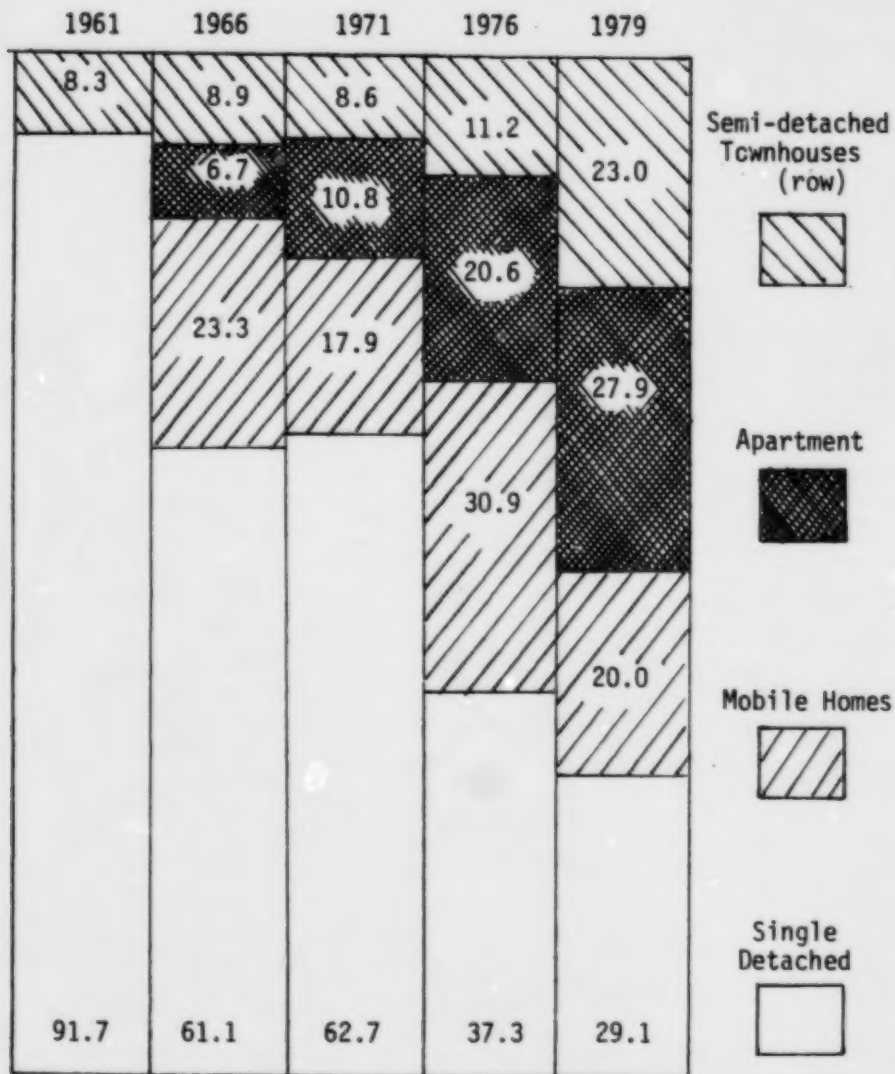


Figure 5. Composition of housing stocks in Fort McMurray, 1961 to 1979. Adapted from Nichols and Associates (1979:103) who use Canadian census results for 1961 to 1976, and New Town of Fort McMurray (1979:7). The category of "other" housing is omitted.

was in operation, and single family housing had recovered slightly to 63% of the housing stock. There were proportionately somewhat fewer mobile homes (18%) and more apartments (11%).

With the construction of Syncrude, the proportion of mobile homes again increased (to 31%). The share of housing accounted for by semi-detached dwellings and townhouses also increased (to 11% in 1976 and 23% in 1979). Apartment units increased from an 11% share in 1971 to 21% in 1976 and 28% in 1979. Single detached housing fell to 37% of housing stocks in 1976, and to 29% in 1979, although this was actually a slight recovery from 28% in 1978. Mobile homes fell to 20% in 1979.

Today, apartments occupy a roughly similar proportion of the housing stock in Edmonton and Fort McMurray. Fort McMurray has a somewhat higher proportion of townhouses, and Edmonton has a very much smaller proportion of mobile homes (roughly 1%). Single detached dwellings comprise about twice as large a share of the housing market in Edmonton (Nichols and Associates 1979). The turn towards multiple family housing and higher residential densities in Fort McMurray appears to be associated with higher than anticipated demand for housing units, and problems of cost. High development and building costs associated with single family housing, and longer lead times necessary to plan and construct such development may have acted to spur the construction of multiple family dwellings (Nichols and Associates 1979).

4.3 SHELTER COSTS AND SUBSIDIES

4.3.1 Introduction

Subsidies play an important part in the housing market in Fort McMurray. The Alberta Housing Corporation provides subsidized housing to Provincial Government employees, Northward Developments Ltd. does the same for Syncrude Employees, and Athabasca Realty provides subsidized housing for Suncor employees. Beyond this, amenities such as cable T.V., large units, recreation centres, and

laundry units (provided in Syncrude staff apartments) constitute a further "hidden" subsidy (Nichols and Associates 1979:112). These factors make shelter costs difficult to evaluate.

In the 1979 AOSERP survey, respondents reported shelter costs (rent or mortgage plus taxes) which averaged \$356 per month. About 46% of the sample paid \$400 or more, and 20% paid \$500 or more. By way of comparison, 18% of the respondents to the February 1979 EAS reported that they paid \$400 or more, and 8% reported that they paid \$500 or more.

A 1978 survey of Fort McMurray by Alberta Housing and Public Works (1978) found 34% paying shelter costs above \$400 per month and about 13% paying more than \$500. However, that same survey found that about 80% of those responding were living in "affordable" housing (less than 28% of the previous year's income). Although rents are high, most people can afford them because incomes are also high.

4.3.2 Shelter Subsidies

Shelter costs in the 1979 AOSERP survey would have been much higher without employer subsidies. Employer subsidies for housing were reported by 46% of the respondents. Ownership had been subsidized for 9% of the sample, and 15% reported subsidized lease-purchase. Rent subsidies were reported by 22% of the respondents.

Types of shelter assistance were broken down by type of dwelling in order to examine the kind of dwellings subsidized (Table 12). Of those living in single family housing, 69% reported some kind of subsidy, with the most frequent type being aid in lease-purchase. Of those in apartments (renters), 41% reported subsidies. Residents living in other multiple family dwellings and in mobile homes reported subsidies in 54% and 18% of the cases, respectively.

The amount of these shelter subsidies appeared to be substantial, but the impact of subsidies on the cost of shelter was difficult to determine. For renters, the difference was relatively

Table 12. Dwelling type by shelter subsidies.

Dwelling Type	Shelter Subsidy				<u>N</u>
	Employer Purchase (%)	Lease Purchase (%)	Rent (%)	No Subsidy (%)	
Single	22.1	33.6	13.1	31.2	122
Duplex/ Townhouse	9.1	20.0	24.5	46.4	110
Apartment	0.0	0.0	40.5	59.5	84
Trailer	2.8	0.0	14.8	82.4	108
Total	9.4	14.9	21.9	53.8	424

easy to interpret. Among renters, those with subsidies reported an average of \$346. This difference was significant at the 0.05 level. If the 16 respondents who lived in company housing and paid no rent at all were included, the average shelter costs for subsidized renters dropped to \$246, a difference from non-subsidized renters that was significant at the 0.001 level.

The impact of subsidization on shelter costs is much less clear for owners and those with lease-purchase tenures. Higher shelter costs were observed for owners with subsidies than for owners without subsidies. Those who received subsidies paid \$445 per month versus \$408 for those without subsidies. This may be a product of more recent purchase and lower equity in the property. Respondents who reported lease-purchase agreements were subsidized in 57 out of 59 cases. Too few were not subsidized for meaningful comparisons within tenure type. Those with subsidies averaged shelter costs of \$424 per month. This was lower (but not significantly) than shelter costs reported by owners who were subsidized. The impact of assistance was clearly not obvious in shelter costs themselves but may have affected residents' equity with respect to their housing. Indeed, the major impact may have occurred in allowing people to buy at all.

4.3.3 Tenure Status, Income, and Length of Residence

A better understanding of the distribution of housing subsidies is obtained by cross-tabulating the percentage of those subsidized by housing tenure (own and lease-purchase versus renters) by 1978 household income. The cutting point of \$25 000 per year income was used since this approximates the mean household income for the sample.

Among owners who reported household incomes of more than \$25 000, 57% reported that they had received housing subsidies. Of the owners with incomes below \$25 000 for 1978, 48% reported that they had received some kind of shelter subsidy. A similar pattern was reported among renters, although they were less likely to

report having received shelter subsidies than were owners. Of the renters with incomes below \$25 000 for 1978, 35% received subsidies. Of those with incomes \$25 000 and over, 51% reported receiving subsidies. Owners were more likely to report subsidies than renters, and among both owners and renters, those with higher incomes were more likely to report subsidies than those with relatively low incomes. Subsidies tend to increase the material advantage of those who are relatively "well-off".

Do subsidies tend to go to those who have arrived relatively recently in Fort McMurray? In Table 13 the sample was divided into two groups by length of residence in Fort McMurray: those who had lived there less than 18 mo, and those who had lived there 18 mo or more. While the relative newcomers were much less likely to own their dwellings, they were not appreciably less likely to receive subsidies. Among renters, those who reported receiving subsidies ($N = 90$) had lived in Fort McMurray an average of 1.9 years. Those who did not report receiving subsidies ($N = 137$) to their rent had lived there slightly longer ($\bar{x} = 2.0$ yr). This difference was not significant.

A similar difference between those who had lease-purchase agreements cannot be estimated, since too few were not subsidized. Those with subsidies ($N = 61$) had lived in Fort McMurray an average of 4.2 years. They had lived there longer than owners who had received subsidies ($N = 37$, $\bar{x} = 3.2$ yr), but not as long as owners who had not been subsidized ($N = 90$, $\bar{x} = 5.5$ yr). Newcomers do not appear to be getting all the "good deals". On the other hand, neither is there any evidence that subsidies induce people to stay longer. However, since the 1979 sample includes only stayers, follow-up panel studies would have to be done in order to draw firm conclusions.

Table 13. Income, length of residence, tenure status, and housing subsidies.

Tenure Status	Income		Length of Residence	
	Below \$25 000	\$25 000 or above	Below 1.5 yrs.	1.5 yrs. or above
Percent Subsidized ^a				
Own or Lease-Purchase	47.6 (63)	57.3 (103)	47.2 (36)	51.9 (154)
Rent or "other"	35.1 (114)	50.8 (67)	39.7 (136)	38.5 (91)

^a Total sample sizes for each cell in the table are reported in brackets below the percentage figure. Sample size was reduced considerably for the part of the table referring to income because of missing data for that variable.

4.4 RESIDENTIAL MOBILITY

4.4.1 Levels of Mobility

Housing mobility in Fort McMurray is very high. About one half of the sample (53%) had lived in their dwelling for less than a year. Only about 8% had lived in their residence for 5 years or more. Comparable figures for the 1979 EAS showed 20% of the Edmonton sample had lived in their dwellings less than a year, and 39% had lived in them for 5 years or more.

In one respect this is not surprising, given the relatively short time that many of the respondents had lived in Fort McMurray. In other respects, it reflects considerable mobility within Fort McMurray, even beyond that associated with recent migration to the community. Of the respondents to the 1979 AOSERP survey, 60% had moved within Fort McMurray, and 30% had moved twice or more. This high level of intra-urban mobility may reflect difficulties in obtaining desired housing (Alberta Housing and Public Works, 1978).

4.4.2 Type of Dwelling: Before and After Moving to Fort McMurray

In the 1979 sample, the proportion in single detached housing dropped substantially on moving to Fort McMurray (Figure 6). Before the move, 58% of the respondents reported that they lived in single detached housing. On arrival in Fort McMurray, only 19% had single detached housing. At the time of interview the figure was 29%.

About 8% of the respondents lived in mobile homes before moving to Fort McMurray. This was substantially higher on arrival (28%), and only slightly lower (26%) at the time of interview. For the 1979 sample, corresponding figures for apartments varied somewhat less with 22% before, 27% on arrival, and 19% at the time of the interview. Those who lived in other multiple family housing before moving to Fort McMurray constituted 12% of the 1979 sample. This housing type was more prevalent on arrival (27%), almost entirely because there was an increase in the proportion of

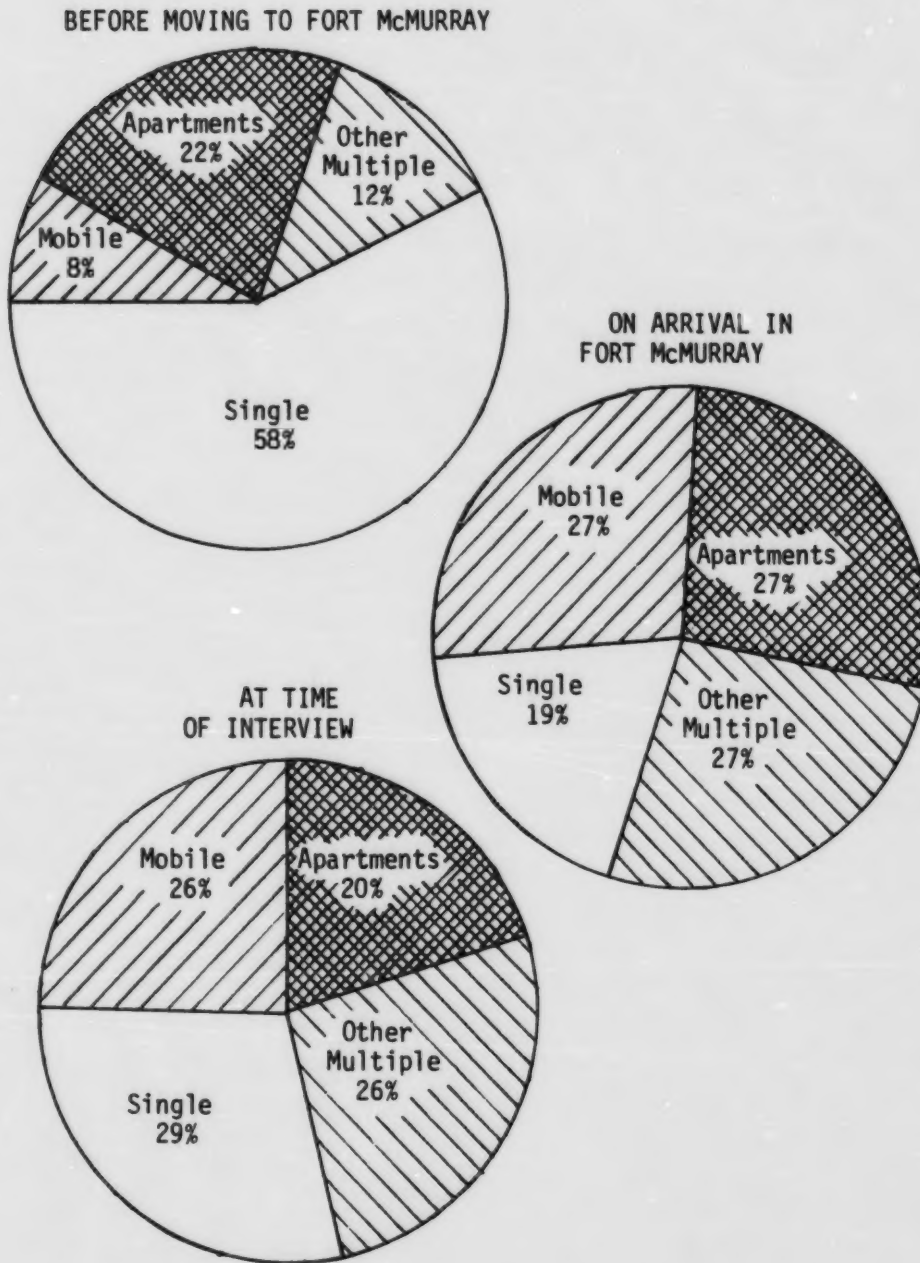


Figure 6. Dwelling type before and after moving to Fort McMurray. For "at time of interview", New Town of Fort McMurray 1979 Municipal Census results were single 29%, apartments 28%, other multiple 23%, and mobile homes 20%. "Other" dwelling types are omitted.

townhouse residents (4% before, 19% after). At the time of the interview, 18% of the respondents were living in townhouses and all multiple family dwellings besides apartments comprised a total of 26%.

There was a lower proportion of single detached housing after moving to Fort McMurray than there was before the move. In interpreting these and other results, several caveats should be noted. First, the 1979 sample under-represented apartment dwellers and over-represented those living in mobile homes. Other house types were more accurately represented. Secondly, a sample of the population drawn in 1979 is unlikely to accurately represent the population at earlier times. Out-migration is probably selective by house type. Thirdly, it is difficult to interpret the distribution of housing types before the move to Fort McMurray and on arrival in Fort McMurray, since these times vary from one respondent to another. Housing stocks have varied considerably over time, and respondents who had been in Fort McMurray longer presumably had greater opportunity to move within the town. Finally, these figures represent only aggregate changes in the distribution of housing types. They do not trace change for individuals.

Individual mobility was studied by using a "retrospective panel" - an analysis that traced the housing history of individuals. At the same time, in an attempt to deal with the third caveat, these changes in house type were examined for three broad migration cohorts: (1) those who came (and stayed) during 1978 or the first six months of 1979; (2) those who moved to Fort McMurray between June of 1975 and the end of 1977 (the peak construction period for Syncrude); and (3) those who moved to Fort McMurray before June of 1975.

4.4.3 Individual Changes in House Type by Cohort

4.4.3.1 Hypotheses. Those who came in earlier cohorts arrived in housing markets characterized by proportionately fewer multiple family dwellings and proportionately more single detached dwellings. Those who had lived in Fort McMurray longer had more opportunity to move, perhaps to improve their accommodations. In addition, it would also be expected that those without single housing would be more likely to leave. For all these reasons, a decreasing proportion of single detached dwellings across cohorts, but an increasing proportion of single detached dwellings across time within cohorts would be predicted.

Is the change involved in moving to Fort McMurray as large as it appears in the overall aggregate distributions (Figure 6)? Although the overall percent for apartment dwellers is about the same before moving, on arrival, and in 1979, how has the increased proportion of multiple family dwellings in the housing mix affected newer arrivals?

4.4.3.2 Moving to Fort McMurray. Cross-tabulation of house type on arrival in Fort McMurray by house type before moving to Fort McMurray (not presented here) showed a lack of significant association ($\chi^2 = 9.1$, $p > 0.05$). The move was so "disruptive" of earlier housing patterns that there was no systematic pattern in the distribution of housing before the move that was associated with housing type after the move. In one sense, there was a total lack of stability in house type (the same type at both times). For example, only 21% of the 238 respondents who started out in single detached housing obtained that type of housing on their arrival in Fort McMurray. Considering all four broad housing types (single, mobile, apartments, and other multiple), only 27% of the respondents had the same type of housing before and after the move to Fort McMurray.

4.4.3.3 Cohort differences in housing type. As expected, cohorts with longer residence had a higher proportion of single housing, and a lower proportion of apartments and other multiple family dwellings. This can be seen by comparing the marginal percentages for single housing across the three cohort sub-tables in Table 14. About 27% of the earliest cohort had single housing on arrival compared to 25% of the cohort that arrived while Syncrude was being built. This dropped to 9% in the most recent cohort. Similar differences across cohorts in housing at the time of the interview (1979) showed the early cohort to have 51% single detached housing, the second cohort to have 38%, and the latest cohort to have 10%.

The share of mobile homes on arrival dropped sharply from the first to the second cohort (45% to 21%), and then remained roughly constant for the third cohort (22%). Current shares of the housing mix showed mobile homes with proportions that decreased from 31% for the earliest cohort, through 27% for the second, to 20% for the most recent arrivals. The earliest cohort was more likely to start out in a mobile home and end up in a mobile home.

The proportion of those in multiple family dwellings (including apartments) on arrival increased markedly between the first and second cohorts (28 to 54%). It increased again between the second and the third cohorts (to 69%). There were even larger cohort differences in proportion presently in multiple family dwellings. This rose from 18% for the cohort who came before June of 1975, to 36% for the cohort who came between then and when Syncrude's construction was finished. For the most recent cohort who arrived during 1978 or 1979, 70% lived in multiple family dwellings.

These increases in multiple family housing and decreases in mobile homes and single detached housing reflect changes in the composition of housing stocks and selectivity in migration. In other words, people who came more recently were more likely to live in multiple family housing because there was much more of it. Also, a greater proportion of those who came earlier and lived in multiple family dwellings may have left.

Table 14. House type in 1979 by house type on arrival in Fort McMurray by migration cohort.

House Type ^a 1979	Arrival House Type			Total	
	Single (%)	Multiple (%)	Mobile (%)	N	%
Arrival before June 1975:					
Single	53.8	51.9	48.8	49	51.0
Multiple	26.9	18.5	11.6	17	17.7
Mobile	19.2	29.6	39.5	30	31.3
Total					
N	26	27	43	96	
%	27.1	28.1	44.8		100.0
Arrival June 1975 to Jan. 1978:					
Single	75.0	31.9	7.4	48	37.5
Multiple	15.6	53.6	14.8	46	35.9
Mobile	9.4	14.5	77.8	34	26.6
Total					
N	32	69	27	128	
%	25.0	53.9	21.1		100.0
Arrival Jan. 1978 to June 1979:					
Single	57.1	6.2	2.8	16	9.8
Multiple	35.7	88.5	25.0	114	69.9
Mobile	7.1	5.3	72.2	33	20.2
Total					
N	14	113	36	163	
%	8.6	69.3	22.1		100.0

^a N = 387. Those who reported "other" dwelling types were omitted.

4.4.3.4 Change in house type for the first cohort. Low stability in house type was evident for the cohort that had lived in Fort McMurray at least 4 years. Only 36 out of the 96 (38%) lived in the same type of dwelling in 1979 as they had on arrival in Fort McMurray. The highest stability was 54% for those in single detached dwellings and the lowest was for those in multiple family dwellings (19%). About one-half of those who did not have single detached dwellings on arrival had moved into them in the interim, whether they had multiple family dwellings or mobile homes on arrival. As a result, the proportion with single detached housing was roughly similar, no matter what kind of housing respondents had when they first arrived.

Overall, for the earliest cohort, change in house type within Fort McMurray was high. There was a lack of significant association between house type on arrival and house type at the time of interview (chi square = 4.41, $p > 0.05$). If anything, the use of these broad house types would tend to understate mobility, since there might be change within the "multiple" category.

4.4.3.5 Change in house type for the second cohort. There was a good deal less individual change in house type between arrival and the time of the interview for those who arrived between June of 1975 and the end of 1977. Of those who had single detached dwellings on arrival, 75% lived in the same type of dwelling at the time of the interview. The corresponding figure for multiple family housing was 54%, while that for mobile homes was 78%. As was observed for the earlier cohort, multiple family housing exhibited the lowest stability.

People in the second cohort who obtained single detached houses when they arrived were much more likely to have them at the time of interview. About 32% of those who had multiple family dwellings when they arrived had moved to single detached dwellings at the time of the interview. Only 7% of those who started out in mobile homes had done so. This contrasts sharply with the experience of the earlier cohort, where "destination" house type was just

as likely to be single no matter what kind of housing the respondent had when he or she first arrived. Clearly, the opportunities for the second cohort to move into this "desired" type of housing (Alberta Housing and Public Works 1978) had been much reduced. The proportion who began in this type of housing was roughly similar to that in the earlier cohort (25% versus 27%).

There was a significant association between housing types on arrival and in 1979 for the cohort that arrived while Syncrude was being built (chi square = 66.14, $p < 0.01$). A shorter length of time since arrival and a tighter housing market during the construction of Syncrude probably both contributed to this stability. For this cohort, housing types were more highly diversified in 1979 than they were for the earlier cohort. This is perhaps largely accounted for by the increase in multiple family housing. Even though many people moved out of this housing type, it had grown from 36% of the total when respondents arrived, to 54% of the total in 1979.

4.4.3.6 Change in house type for the most recent cohort. Higher stability for those that had arrived in the 18 mo prior to the survey might be expected, if only because they had had less opportunity to move. The overall association between house type on arrival and house type at time of interview bore this out (chi square = 115.25, $p < 0.001$). Those who had multiple family housing on arrival were particularly stable with 89% in the same dwelling type at both times. More detailed analysis revealed that it was particularly those in semi-detached or townhouse dwellings that accounted for this high stability.

Surprisingly, those who had single detached dwellings when they arrived showed relatively low stability (57%). However, this observation was based on a very small sub-sample ($N = 14$), since so few were able to obtain this kind of housing on arrival. Few people had moved from other types of housing into single

detached houses between the time they arrived and the interview, and the proportion of those in single detached housing remained low (10%).

4.4.3.7 Individual change over all three times The magnitude of the changes in house type experienced by the sample is reflected in the simple distinction between single detached housing and all other types. Omitting those who reported their housing types as "other", 13% of the sample (51 people) had single detached housing both before they came, and at the time of the interview. This included 21 respondents who did not have it when they arrived, but had managed to obtain single housing by the time of the interview.

A total of 65 respondents (17%) did not have single detached housing before they came but had it by the time they were interviewed. Of these, 19 obtained single housing when they arrived and a further 46 obtained it after they had moved to Fort McMurray.

About 30% (N = 117) did not have single detached housing at any of the three times that were assessed in the survey. A further 27 respondents (7%) had single family housing when they arrived, but did not have it when they were interviewed. However, the largest group were those who had single family housing before they came, but had not had it since (N = 132, 34%). While it was relatively rare for respondents to move out of single family housing while they were living in Fort McMurray, many of them had made this kind of a move on coming to the town.

It was much more common for respondents to "lose" single detached housing in the move to Fort McMurray than it was to observe that they had gained it in the move. In this sense, moving to Fort McMurray does not appear to have represented an improvement in housing. In all of this it must be remembered that all moves are not reflected in changes in dwelling type. Changes of residence is a necessary but not sufficient condition for changes in dwelling type. Thus, housing stability more broadly defined as length of residence in dwelling must also be examined.

4.5 HOUSING STABILITY

4.5.1 Length of Residence in Dwelling

Change in the type of dwelling is an important indicator of the quality of life in resource communities. This is particularly so since almost everybody in Fort McMurray appears to want single detached housing (Alberta Housing and Public Works, 1978). Differences in length of residence in the dwelling by house type and by tenure status would be expected, given the already reported results. Longer stay in the community certainly allows longer residence in the dwelling ($r = 0.568$, $p < 0.001$), and staying longer may increase the opportunity to improve housing tenure. Those who owned their dwelling would also be expected to have lived in it longer, all other things being equal.

It is important to control for length of stay in the community when examining other influences on housing stability. For example, those with single detached housing would be expected to have lived in it longer, since this "better" housing presumably gives them reason to stay. Similarly, some areas may be "better" (higher prestige, better neighbourhoods) than others and therefore might induce residents to have higher housing stability.

Relatively low shelter costs may also act as an incentive to keep people from moving. Other features of the house, such as its size, may make a dwelling more attractive and therefore increase housing stability. Characteristics of the people that live in the dwellings might also be important. Are older people less likely to move? Are the married or those with children more stable in terms of residential mobility? Do those who work for one of the major oil companies show high housing stability, and do employer shelter subsidies act as an incentive to reduce housing mobility.

It is important to be able to estimate the effects of each of these factors independent of the others. Housing stability may be a function of a combination of environmental, individual and dwelling characteristics that are themselves inter-related. For this purpose, a multiple regression model is utilized.

4.5.2 Regression Results

Stepwise multiple regression results for a reduced form equation (only variables significant at the 0.05 level) predicting years in dwelling are reported in Table 15. Variables used as possible predictors included: (1) characteristics of the dwelling; (2) its environment; and (3) the people that lived in the dwelling. The order in which the variables are presented represents the order in which they were entered (stepwise) into the equation. Only cases with complete data for all variables were included in the analysis. This resulted in a sample size of 370 cases.

4.5.2.1 Years resident in Fort McMurray. Housing stability was a function of the total length of residence in Fort McMurray, even when other variables were controlled. For each additional year of stay, respondents had lived in their present dwellings about 0.22 years. Had they lived in the dwellings for all the time they had lived in Fort McMurray, the slope would have been 1.00. Given the short length of stay of many residents, these results reinforce the picture of considerable mobility within the town.

Length of residence in Fort McMurray was also included in the analysis as a control for "opportunity" to stay in the dwelling. The multiple regression procedure thus adjusted other variables to represent their effects on housing stability controlling for maximum possible housing stability (length of residence in the community).

After adjusting for these effects, there were not significant differences in housing stability for people who had previously lived in other isolated resource communities. Education, marital status, and number of children also did not have significant effects. Males exhibited similar housing stability as females. These factors did not appear to influence housing stability one way or the other.

4.5.2.2 Housing and environment. Four broad housing types were used in the analysis: (1) single detached; (2) mobile homes; (3) apartments; and (4) other multiple (semi-detached, row, four-plex). In the regression analysis, house types were entered as

Table 15. Multiple regression equation: housing stability within Fort McMurray.

VARIABLE	B	St. error	Beta	F ^a	r
Years residence in Fort McMurray	0.223	0.025	0.387	80.44	0.568
Single house	0.763	0.233	0.152	10.70	0.412
Waterways	-1.044	0.514	-0.083	4.13	-0.055
\$'00 shelter costs	-0.247	0.052	-0.189	22.62	-0.160
Own	0.619	0.222	0.139	7.49	0.365
R's age	0.029	0.009	0.123	10.00	0.378
Lower Town	1.202	0.209	0.267	32.99	0.195
Household possessions	0.148	0.043	0.149	11.83	0.325
Prior mobility	-0.070	0.030	-0.089	5.59	-0.287
Work for oil companies	0.449	0.196	0.098	5.25	0.119
Gregoire	1.163	0.371	0.170	9.85	-0.016
Mobile home	-0.731	0.284	-0.141	6.60	-0.061
Constant	-0.604				
	$R^2 = 0.558$		$F = 37.53$		$N = 370$

^a All effects are significant at the 0.05 level.

dummy variables coded one for the presence of a particular type and zero for its absence. The same procedure was used for sub-community areas within Fort McMurray. One binary variable was created for each nominal category of each variable. Regressions were constrained to omit at least one of these dummy variables from each set. The omitted category or categories become the comparison (the constant in the equation).

As expected, those in single detached dwellings showed greater housing stability. Controlling for the other variables reported in Table 15, those in single detached dwellings had lived there 0.76 years longer than had those in apartments or multiple dwellings. Those who lived in mobile homes had lived there 0.73 years less than those in apartments and multiple dwellings. These differences were particularly interesting because the observed average length of residence in the dwelling for mobile homes was 1.55 years. Apartment dwellers had lived in their apartments an average of 0.87 years, and those in other multiple family dwellings had lived there an average of 1.02 years. Single family dwellings averaged 3.52 years. Observed effects showed that those in mobile homes exhibited greater housing stability than those in either apartments or other multiple family dwellings. After introducing controls, the effects of mobile homes were negative.

Two variables were important in explaining this difference between observed and net effects. The first was ownership and the second was location in Gregoire Park. As can be seen in Table 15, both these factors had positive effects on housing stability. In effect, they explain the longer length of residence of those in mobile homes. When the positive effects of ownership and living in Gregoire Park were removed, those in mobile homes had significantly lower housing stability than those in multiple family housing. The mobile homes themselves did not lead to greater stability. Rather, it was ownership and location in Gregoire Park (a mobile home site). Gregoire Park was completed rather early (1973), and many Bechtel construction workers lived there. A number of them remained at the time of the interview and this may explain the

positive effects observed for Gregoire Park. Also, it was clearly the best mobile home park in Fort McMurray. It was preferred over Lower Town or Waterways because it was well laid out and well kept. These factors are further examined in the discussion of PHQ below.

Those who owned (or lease-purchased) had lived in their dwellings 0.62 years longer than those who rented. In this sense, the investment involved in ownership appeared to increase housing stability, even beyond the influence of other factors reported in Table 15.

The significant effects of Gregoire Park location have already been noted. There were significant differences between Waterways, Lower Town and Gregoire Park locations when they were compared against residents of the other three newer areas (Beacon Hill, Abasand Heights, and Thickwood Heights). As was the case with housing type, observed area differences could be attributed to specific factors in the composition of the areas.

Respondents resident in Lower Town averaged 2.5 years in their houses. Somewhat lower were those in Beacon Hill ($\bar{x}$ = 1.8 years), Gregoire Park (1.7 years) and those in Waterways (1.5 years). The two areas with the lowest housing stability were Thickwood Heights (1.3 years) and Abasand (1 year).

After adjusting for other factors in Table 15 (such as years resident, house type, ownership, age of respondent, etc.), Waterways residents had actually lived in their dwellings a shorter length of time (1 year less) than residents of Beacon Hill, Abasand Heights, and Thickwood Heights. Residents in Lower Town had lived in their dwellings 1.2 years longer than residents of the three newer areas, and residents of Gregoire Park had lived in their mobile homes 1.2 years longer.

Shelter costs (rent or mortgage plus taxes) appeared to act as an incentive for staying in a dwelling independent of its type, location, or other characteristics. For every \$100 decrease in shelter costs, respondents had lived in their housing about 0.25 years longer. Those who had lived in their dwellings for a

shorter time appeared to have higher shelter costs, even controlling for such factors as level of living (household possessions), years in the community, respondents' age, and home ownership. Such effects are also observed because of the increasing equity which long term owners build.

4.5.2.3 Respondent characteristics. The dwelling and the area in which it was located had a marked effect on housing stability. So too did several characteristics of the residents themselves, although these effects tended to be somewhat smaller. Older residents, those who had accumulated more household possessions, those with low prior mobility, and those who worked for Syncrude or Suncor had higher housing stability.

The older the respondent, the longer he or she had lived in his or her dwelling. Age had small positive effects with years in dwelling increasing about 0.29 years for each 10 years of increase in age. These effects were significant even after years residence in Fort McMurray was controlled. The positive effects of age on both length of residence in Fort McMurray, and on housing stability (controlling for length of residence in Fort McMurray) reflect the higher stability generally observed for older people below retirement age (Kalbach and McVey 1979; Shaw 1975).

The more household possessions (such as appliances, sports equipment, colour T.V.) residents had accumulated, the longer they had lived in their dwelling. Since these effects were independent of factors such as age, home ownership, and years of residence in the community, it is likely that household possessions, like owning a home, reflect part of the investment people make in where they live. The more household possessions they have, the more "tied down" the respondent appeared to be.

Prior mobility over the 5 years previous to the survey had a negative effect on housing stability, even when length of

residence in Fort McMurray was controlled. This adjustment for length of time in Fort McMurray is important, since without it the effects of prior mobility might simply reflect length of stay in the community.

Housing stability was greater for those who worked for the major oil companies. Respondents who worked for Syncrude or Suncor, or had spouses employed by these companies, had lived in their dwellings an average of 0.45 years longer than those who worked for other employers. Employer subsidies for housing or the jobs and pay offered may increase housing stability, and through it, community stability. Subsidies themselves had mixed effects on stability. Those who were subsidized to buy or lease purchase (including those not working for the major oil companies) had lived in their dwellings longer than owners without subsidies. Those who received rent subsidies had lived in their residence a shorter time than renters without subsidies. These observed differences were significant at the 0.05 level. However, none of these direct indicators of subsidies had significant effects on housing stability after length of residence in Fort McMurray, house type, and shelter costs were controlled. Effects may have appeared directly in the level of shelter costs (lower costs then higher stability) and in working for the oil companies.

For each year they had lived in Fort McMurray, residents had lived 0.22 years in their dwellings. This supported the assessment of high mobility within the town. When length of stay was controlled, effects of other predictors were thereby adjusted for maximum possible housing stability.

4.5.3 Summary

Net of these effects, type of house made a big difference with single housing being more stable and mobile homes less so. Ownership and lower shelter costs both had independent effects in increasing stability. Subsidies themselves and factors such as the size of the dwelling (number of bedrooms, bathrooms) did not have

significant effects once other factors were controlled. Subsidy effects appeared in the level of shelter cost itself, and in whether the respondent or his or her spouse worked for Syncrude or Suncor.

Environmental factors external to the house also played a large part in determining housing stability. Residents of Waterways had lived in their homes a shorter period, and residents of Lower Town and Gregoire Park had lived in their dwellings a longer time than those who lived in the other three newer areas (Beacon Hill, Abasand Heights, Thickwood Heights). Differences between these latter three areas were a product of the composition of the areas. Respondents' perceptions of the market (difficulty in getting the housing wanted), and their attitudes towards the immediate neighbourhood environment (satisfaction with neighbourhood) did not have significant independent effects on housing stability.

Personal characteristics of respondents also played a role in housing stability. Older residents showed higher housing stability, even adjusting for the length of time that they had lived in Fort McMurray. Those who had moved fewer times during the past five years had lived in their dwellings longer, even after discounting the effects of length of residence. The more household possessions people had accumulated, the longer they had lived in their dwelling. Also, if someone in the household worked for one of the major employers in Fort McMurray, Syncrude or Suncor, they exhibited greater housing stability.

4.6 PERCEPTIONS OF HOUSING QUALITY

4.6.1 Hypotheses

Can it be inferred from this instability in housing that people do not generally like the housing they have? Do people perceive housing as problematic? What features are seen as problems?

People's perceptions of housing quality (PHQ) intervene between the market and individual factors that are exogenous, and

decisions as to whether to move (Speare et al. 1975; Nickels et al. 1976; Porteous 1976). PHQ is also an important dimension of the quality of life (Campbell et al. 1976).

People's decisions to move out of their housing cannot be adequately investigated since that would require data collection after as well as before the event. However, factors which constitute the link between an individual's social milieu and his or her subjective evaluations of the quality of housing can be examined.

Again, three types of factors are of particular interest: (1) housing design that may create problems in (2) different kinds of contexts for (3) people with different kinds of requirements or values. An attempt to assess the impact on PHQ of what might be labelled "objective" housing factors (house type, house size, housing tenure, and shelter costs and subsidies) is provided first. Secondly, the analysis takes into account what can broadly be referred to as housing "environments": differences between sub-communities within Fort McMurray, respondents assessments of their neighbourhoods, and perceptions of difficulties in getting desired housing. Finally, characteristics of the residents themselves (demographic and social differences, and particularly differences in length of residence in the dwelling) are analyzed.

4.6.2 Design Features

Residents did not rate the quality of their dwellings highly, particularly their external features. Respondents were asked to rate the quality of 12 different dimensions of their dwellings. Ratings were on a seven point scale. The results of these ratings are presented in Table 16. The 12 design features are listed in rank order from those judged to be poorest to those judged to be best. Two conclusions can be drawn from these results. Respondents rated PHQ relatively low and external design features of dwellings were systematically rated as having lower quality than were interior design features.

Table 16. Respondents' evaluations of housing.

Design Feature	Housing Evaluation ^a					$\bar{x}$
	Very Poor (%)	Poor (%)	Neutral (%)	Good (%)	Very Good (%)	
Landscaping	20.8	20.9	22.2	27.4	8.7	3.74
Child space	22.6	18.1	11.6	29.0	18.8	4.06
Privacy	14.1	21.5	15.0	32.5	16.9	4.26
Space outside	13.9	23.3	12.7	31.5	18.6	4.29
Noise	13.7	21.8	15.8	37.2	13.4	4.29
Storage	12.4	18.3	14.8	35.9	18.5	4.47
Insulation	7.6	18.3	17.4	38.3	18.1	4.65
Condition exterior	5.9	17.4	18.6	44.2	13.9	4.69
Parking	13.1	12.2	13.8	39.2	21.8	4.70
Room design	2.8	17.5	20.8	44.0	15.0	4.76
Space inside	6.5	16.6	12.3	42.0	21.5	4.90
Condition interior	1.7	8.9	15.3	49.8	24.3	5.35

^a The average score ($\bar{x}$) was calculated from the original "very poor (1) - (7) very good" scale. In this table, "poor" represents scores of 2 and 3, 4 is considered a "neutral" score, and "good" is represented by scores of 5 and 6.

Landscaping was rated as poor quality (a score of one to three on the seven-point scale) by 42% of the sample. However, 36% rated it as good (five to seven), showing a wide variation in ratings within Fort McMurray. Ratings of the quality of places for children to play outside the home also varied considerably. About 23% rated these factors as very poor (one), and 19% rated it as very good (seven). Indeed, this same pattern was repeated for privacy, outside space, and noise. In each case, over 35% of the sample rated each factor as poor (three or below), while 40 to 50% rated it as good. At the other extreme, room design, space inside, the condition of the interior, and even parking (an exterior feature) were all rated as good by 60 to 70% of the sample.

4.6.2.1 Comparisons with 1978. In many respects, these results show a similar pattern to those obtained in a February 1978 survey undertaken by the Policy and Planning Division of Alberta Housing and Public Works. If anything, the differences between that survey and the present one tend to show increasing "dissatisfaction" with housing, despite improvements in housing stocks.

In the 1978 survey, insulation (both sound and thermal) was the design feature with which respondents were most often not satisfied (about 50% of the sample of about 2300 who mailed back the questionnaire). Storage and landscaping were the only other features with levels of dissatisfaction above 30%. The only other explicitly external feature that was rated was exterior condition, and about 20% indicated dissatisfaction with it. Overall, 22% of the approximately 2300 respondents indicated that they were not satisfied with their housing.

If anything, respondents to the 1979 AOSERP survey (15 to 16 mo later) appeared to indicate greater dissatisfaction within their housing. If all 12 items are averaged, 34% of the respondents gave overall ratings to their dwellings that were below the mid-point on the seven-point scale.

4.6.2.2 Housing environments. The relatively poor assessments which respondents to the 1979 survey gave to external housing factors were corroborated by relatively high dissatisfaction with neighbourhoods and assessments of the housing market.

In response to the attitude statement "It's hard to get the kind of housing you really want", 46% agreed strongly (seven on the seven-point scale). Less than 15% disagreed at all (one to three). This attitude was correlated with the summated 12 item index of PHQ ($r = -0.340$, $p < 0.001$). In this sense, market difficulties may be partially responsible for perceptions of low quality in housing.

Respondents were relatively dissatisfied with their neighbourhoods. About 40% of the respondents to the 1979 survey of Fort McMurray indicated that they were highly satisfied (a six or seven on the seven-point scale). In a similar survey of Edmonton (the 1979 EAS), 72% reported that they were highly satisfied. Neighbourhood satisfaction was significantly lower in Fort McMurray ($t = 6.14$, $p < 0.001$).

Neighbourhood satisfaction was strongly correlated with the summated 12 item index of PHQ ($r = 0.550$, $p < 0.001$). The more dissatisfied people were with their neighbourhoods, the lower the perceived quality of dwellings. Since neighbourhood factors refer broadly to both the physical and the social environment of the dwelling, this serves as added confirmation for the low ratings given to external features of the dwellings.

4.6.3 Area, Housing Type, and Housing Tenure

4.6.3.1 Area. In order to further examine these effects, the following analysis looks at each design feature by sub-community within Fort McMurray. The areas that form the sub-communities represent the larger environment within which dwellings are located. Perhaps the most interesting result was the low PHQ ratings given to housing in the newest area, Abasand, constructed in 1976 for Syncrude employees.

On each of the 12 housing design factors, scores of one to three were collapsed to form a rating of "poor quality" (Table 17). The percentage of respondents from different areas that rated the design factors as poor varied considerably across the six sub-communities within Fort McMurray. Those who lived in Waterways, the oldest area and one with a high proportion of mobile homes (69%), reported relatively poor quality landscaping, interior space, condition of the interior, condition of the exterior, and noise. The latter may be due to the proximity of Hwy. 63, the main access into town. Other than this, landscaping, space outside, noise and privacy received a relatively high proportion of poor ratings. Over one-half the residents of the larger, more diverse area of Lower Town found space outside for children to play to be of poor quality.

In comparison with Waterways, Gregoire Park, established in 1973 and containing only mobile homes, did not seem to have the same problems. Parking, storage, and insulation were particularly problematic for residents of Gregoire Park. So too were privacy, places for children to play, outside space, and landscaping. The only factors that did not receive relatively low ratings were noise, exterior condition and the three interior features of room design, space inside, and interior condition. These low ratings seem to reflect the fairly dense layout of the mobile home park. Each site is relatively small and there appears to be relatively little green space (or trees) developed within the area.

Residents of Thickwood Heights did not give particularly poor ratings to any factor, except landscaping (47%) and perhaps insulation (33%). Space outside, privacy, and noise also received low ratings from about 31% of the residents of Thickwood Heights. Since Thickwood Heights was the only area in which active residential construction was underway at the time of the survey, this kind of disruption did not appear to have been a big factor in producing poor ratings for external features of the house.

Table 17. Evaluation of design features by sub-community.^a

Design Feature	Area of Town					
	Lower Town	Water-ways	Beacon Hill	Greg-oire	Thick-wood	Aba-sand
	Percent Poor Quality					
Landscaping	40.7	56.2	19.4	45.1	46.8	43.1
Child space	53.6	33.3	5.4	39.2	27.7	50.0
Privacy	33.7	37.5	13.5	45.1	31.2	53.4
Space outside	40.6	25.0	16.2	34.0	31.9	55.2
Noise	35.7	50.0	13.5	27.4	31.5	43.1
Storage	30.4	37.5	18.9	46.0	22.3	37.9
Insulation ^b	19.9	26.7	17.6	35.3	32.9	30.4
Exterior condition ^b	24.3	37.5	10.8	15.7	25.5	27.6
Parking	24.6	18.8	10.8	39.2	16.0	41.4
Room design	19.8	18.8	8.1	21.6	14.9	37.9
Space inside	19.8	37.5	8.1	29.4	20.2	37.9
Interior condition	12.9	31.2	5.4	6.0	7.4	10.5

^a Sample sizes vary slightly by item, since "don't know" responses were omitted. Only insulation drew a sizable proportion of these responses and its sample size is 397.

^b These differences between sub-communities were not significant at the 0.05 level.

Those living in Abasand Heights were the most likely to perceive their housing as having poor quality features. The only features of the 12 that did not receive a poor rating by a relatively high proportion of the residents were exterior and interior conditions. The latter is not surprising, given the recent construction (1976) of the development. One-half of the respondents rated places for children to play outside as poor. Space outside was rated as poor by 55% of the respondents, and privacy was rated as poor by 53%. Noise and parking were two other features that were rated as poor by over 40% of the sample, and even room design and space inside were downgraded by 38% of the residents. At the other end of the continuum, Beacon Hill residents rated very few of their dwellings' features as poor. Even landscaping was rated as poor by only 19% of the residents in that area.

4.6.3.2 Tenure status. Owners liked almost everything about their dwellings more than did non-owners. Landscaping and privacy showed non-significant differences by tenure, and insulation and parking were given poor ratings by roughly one-quarter of the respondents whether they rented or owned. Everything else was judged to be better by owners. Some of the differences between areas may be accounted for by differences in tenure status, and also by differences in house type. Before turning to a detailed examination of overall PHQ by area, house type, and housing tenure, differences in the evaluation of housing features by house type are examined.

4.6.3.3 House type. Respondents in different types of housing did not differ significantly in their ratings of the condition of the interior, exterior, or insulation of the dwellings (Table 18). Room design and space inside were also rated as poor relatively infrequently with apartment dwellers (30%) most often seeing these features as poor. Single detached housing did not receive frequent poor ratings on any design feature.

Table 18. Evaluation of design features by house type.

Design Feature	House Type			
	Single	Duplex/ Townhouse	Apt.	Mobile Home
	Percent Poor Quality			
Landscaping	27.0	43.6	38.6	59.4
Child space	23.8	33.3	63.8	49.5
Privacy	19.0	45.4	33.7	45.8
Space outside	9.8	54.6	51.8	39.6
Noise	16.4	44.4	47.0	31.1
Storage	16.4	27.5	38.6	45.3
Insulation ^a	25.4	26.7	20.6	30.3
Exterior condition ^a	18.0	29.1	22.5	24.3
Parking	8.2	32.7	30.5	34.6
Room design	12.3	23.6	30.1	18.7
Space inside	12.1	26.4	30.1	26.2
Interior condition ^a	7.4	14.7	12.2	9.5

^a These differences between house types were not significant at the 0.05 level.

The highest percentage of poor ratings was given by apartment dwellers to outside space for children (64%). Apartment dwellers gave poor ratings to space outside (52%) and noise (47%). They also rated landscaping as poor (39%), although this was more frequently the assessment of mobile home residents (59%) and those in non-apartment multiple family housing (44%). Residents of this latter type of housing also rated space outside (55%), privacy (45%), and noise (44%) as particularly problematic. Residents of mobile homes also rated space outside (40%), places for children to play (50%), privacy (46%) and storage (45%) to be of poor quality.

4.6.3.4 Overall PHQ by area, house type, and housing tenure. The low ratings given to mobile homes, rental accommodation, and dwellings in Abasands may in part represent "confounded" explanations, since the areas, for example, differ in their composition by house type and house tenure. To examine the effects of these three variables on PHQ, an overall index was constructed from the scores on the 12 design features. The index ranges from zero to 100 with higher scores representing higher ratings.

One-way analysis of variance of these scores by area (means reported in Table 19) showed that 7% of the variance in the summated score could be explained by differences between areas. This was significant at the 0.001 level. Beacon Hill residents gave their dwellings the highest average ratings with other areas quite a bit lower and fairly similar to one another. Dwellings in Abasand Heights received the lowest average ratings.

Those who owned or lease-purchased their dwellings averaged 63. Those who rented averaged about 54, a difference that accounted for 6% of the variance in the summated PHQ index ($p < 0.001$). Single detached dwellings were given average ratings of 68. Apartments averaged 52 and other multiple (56) and mobile home dwellings (53) were grouped closely together. One-way analysis of variance results showed that these differences (largely that between single and other) explained about 12% of the variance in PHQ.

Table 19. Housing evaluation by house type and housing tenure by area.

Area and House Type	Tenure Status ^a					
	Own		Rent		Total	
	$\bar{x}$	N	$\bar{x}$	N	$\bar{x}$	N
Beacon Hill ($\bar{x}$ = 72)						
Single	75	14	68	6	73	20
Multiple ^b	75	2	62	8	65	10
Mobile	76	3	94	2	83	5
Thickwood Heights ($\bar{x}$ = 60)						
Single	65	42	55	6	64	48
Multiple	56	12	56	23	56	35
Apt.	--	--	55	6	55	6
Waterways ($\bar{x}$ = 58)						
Single	72	2	73	2	72	4
Mobile	67	4	47	8	53	12
Lower Town ($\bar{x}$ = 57)						
Single	72	33	64	12	70	45
Multiple	59	5	65	13	63	18
Mobile	49	19	44	18	47	37
Apt.	--	--	51	60	51	60
Gregoire Park ($\bar{x}$ = 55)						
Mobile	58	33	49	14	55	47
Abasand Heights ($\bar{x}$ = 52)						
Single	73	2	--	--	73	2
Multiple	56	16	47	28	50	44
Apt.	--	--	58	10	58	10

^a "Own" includes lease-purchase, and rent includes those with "other" tenure statuses.

^b Multiple includes semi-detached, duplexes, townhouses, and multiple dwellings other than apartments.

When area results are broken down by both housing type and housing tenure (Table 19) results must be interpreted with caution because of the small sub-sample sizes involved. These are reported in Table 19. Generally, owners rated their dwellings as higher quality no matter what the house type or its location. The only exceptions to this involved mobile homes in Beacon Hill, single detached housing in Waterways, and multiple family dwellings other than apartments located in Lower Town. The mobile homes involved a very small sub-sample in Beacon Hill (five altogether), as did the single detached dwellings in Waterways ($N = 4$). The difference in Lower Town is based on a larger N and shows more reliable negative effects of ownership.

Ignoring ownership status, mobile homes provided the greatest extremes in ratings depending on their location. The highest ratings were for those few in Beacon Hill (83) and the lowest were for mobile homes in Lower Town (47). Again, this emphasizes the importance of the environment in respondents' perceptions of their housing. In Beacon Hill, the mobile homes are set on relatively large lots in pleasant surroundings. Those in Lower Town (at the south-east end along the river) are situated in an area with few trees, poor drainage, and littered yards. Poor ratings were also given to mobile homes in Waterways, for many of the same reasons. They too are often in poor condition and their location next to the river subjects them to flooding. Even those who lived in Gregoire Park did not rate their mobile homes highly if they did not own them, and even then the ratings were relatively low (58). Combining the mobile home owners and renters who averaged less than 50 on PHQ accounts for 15% of the total sample. They comprised a sizable minority of all respondents.

Single detached housing was rated as having the most consistently high overall quality. This ranged from Beacon Hill home-owners at 73 to the six respondents who rented single detached housing in Thickwood Heights ($\bar{x} = 64$).

Duplex and townhouse housing (multiple) also had the highest rating when it was located in Beacon Hill ($\bar{x} = 64$). The lowest rating for this type of housing was given by the 11% of the sample who lived in Abasand Heights. If they owned these dwellings, they averaged a PHQ of 56. If they did not, they rated them as very poor (averaging 48). Since these renters comprised 7% of the total sample, they were the second largest group (besides mobile home renters) who rated their housing as poor.

These results are all the more striking because the external appearance, reputed high quality, and recent construction of these units do not provide the same apparently obvious explanation given to the low ratings for rented mobile homes. Even the apartments in Abasand were rated higher (58). Indeed, these apartments were rated as the highest quality apartments in any area in Fort McMurray. These differences are examined in a multivariate analysis of PHQ which follows. First, however, a brief examination of the effects of house type change on PHQ is provided.

4.6.3.5 Change in house type. One of the factors that could be involved in these ratings is respondents' comparisons of the housing they have had in the past. Given the importance of the distinction between single detached housing and all other types, the analysis focused on an investigation of the effects of single housing at three points in time: before moving to Fort McMurray, after arrival, and at the time of the interview. What effects did acquiring single detached housing have on PHQ and what effects did "losing" single detached housing have on PHQ?

Those who had single family housing before they moved to Fort McMurray and still had it at the time of the interview (even if they did not have it on arrival), comprised 18% ($N = 51$) of the sample. These respondents rated their housing as having the highest quality of any of the house type combinations examined (about 70). The groups that presently lived in single housing and had gained it in Fort McMurray ($N = 65$) averaged only slightly lower ratings (67).

Of those who were not in single housing at the time of the interview, the highest PHQ scores ($\bar{x} = 62$) were given by the few ($N = 18$) who had single housing both before moving and on arrival. The 30% of the sample who did not have single housing at any of the three times measured have average PHQ ratings of 56. Those who had single family housing before coming to Fort McMurray, but did not have it on arrival or at the time of the interview, averaged 51. The lowest PHQ ratings were given by the few ($N = 9$) who had single family housing only on arrival in Fort McMurray ($\bar{x} = 45$). While there was some difference in ratings dependent on what respondents lived in before moving to Fort McMurray and on arrival in the community, differences were principally between those who had single housing at the time of the interview, and those who did not.

4.6.4 Determinants of Subjective Ratings of Housing Quality

4.6.4.1 Hypotheses. It is apparent that people's PHQ scores are a function of "objective" housing characteristics such as house type and tenure, and environmental factors such as area of town, neighbourhood satisfaction, and attitudes towards housing markets. These factors partially overlap in their explanation of PHQ, and there are other factors that should be considered. The objective in this multivariate regression analysis is to introduce a more elaborate specification of the general model that sees housing satisfaction as a function of: (1) objective housing characteristics; (2) environmental factors (including perceptions of the environment); and (3) characteristics of the residents.

Are the observed positive effects of single housing independent of other factors? To what degree are housing differences in PHQ explained by other housing variables or any other variables that are specified in the model? Can differences between housing types or sub-community locations be explained by characteristics of the perceived environment or variables that describe the dwelling's residents?

In this exploratory analysis house size (number of bedrooms, bathrooms), housing costs (shelter costs per month), and assistance in paying for shelter costs were introduced as further possible determinants of perceptions of housing quality. It was hypothesized that all these factors would be positively related to PHQ on the assumption that larger and more expensive housing would be of higher quality. Shelter costs assistance might mean that the respondents would be getting a "bargain" and therefore think better of it.

Individual characteristics included demographic factors such as age, sex, marital status, and number of children. These variables were included largely as controls, but their effects will show if particular demographic groups (for example, the young or those with many children) were systematically experiencing housing problems. Employment (applicable to females since almost all males were employed) was also included, as were years of education, and whether the respondent or his or her spouse was working for Syncrude or Suncor.

Whether respondents had previously lived in resource communities was included on the hypothesis that comparative experience might make a difference in PHQ. Level of living (household possessions) was also included to see if better furnishing and equipping of the dwelling had any impact.

Finally, length of residence in the dwelling was also employed as an independent variable. The working hypothesis was that people adjust their perceptions over time and so come to like their housing more (holding constant its "objective" characteristics). Length of residence in the dwelling also measured experience, and it was expected that housing stability would be positively correlated with perceived quality of housing.

Again, regressions were run stepwise and the reduced form equation is reported with variables listed in the order in which they were entered (Table 20). Only those cases were included for

Table 20. Multiple regression equation: perceived housing quality with selected independent variables.

VARIABLE	B	St. error	Beta	F ^a	r
Neighbourhood satisfaction	5.306	0.524	0.451	102.60	0.550
No. of bathrooms	3.907	1.431	0.123	7.46	0.209
Hard to get housing	-1.673	0.436	-0.163	14.69	-0.340
Single dwelling	8.115	2.110	0.196	14.80	0.345
Thickwood	-5.690	2.007	-0.126	8.04	0.043
Yrs. residence in dwelling	-1.288	0.385	-0.162	11.18	0.089
R's age	0.223	0.087	0.115	6.62	0.203
Constant	29.338				
$R^2 = 0.400$		$F = 35.67$		$N = 382$	

^a All effects are significant at the 0.05 level.

which complete data were available. The seven variables which had significant (at the 0.05 level) partial effects accounted for 40% of the variance in PHQ.

4.6.4.2 Environmental factors. Three of these indicators were important: neighbourhood satisfaction, attitudes towards the housing market, and area of residence. Attitudes towards the neighbourhood was the most important predictor of PHQ (Beta = 0.451).

Respondents' attitudes towards the housing market also had a significant impact on PHQ ratings. The more problematic the respondent perceived his or her position in the housing market, the lower the PHQ. These effects were present even after adjusting for satisfaction with neighbourhood, house type, and respondent characteristics. In this sense, the observed effects of attitudes towards the housing market were not simply a function of the kind of housing that the respondent had, the neighbourhood in which it was located, or any of the other factors included in the model. The observed effects of attitudes towards the housing market ($r = -0.340$) were partially a function of neighbourhood satisfaction (first order partial correlation = -0.184 , $F = 17.32$, $p < 0.001$), but other controls had little effect.

The third significant environmental effect on PHQ was an apparent negative effect of living in Thickwood Heights. Other things being equal, respondents who lived in that area rated their dwellings 5.7 points lower than respondents who lived anywhere else. Of course, other things are not equal and the observed average PHQ for Thickwood Heights was 60. This was higher than the average PHQ for Waterways (58), Gregoire Park (55), Lower Town (57), and Abasand Heights (52). Indeed, from the observed results one would conclude that the big difference was whether or not respondents lived in Beacon Hill ($\bar{x} = 72$). Variables introduced into the equation entirely accounted for this difference.

Beacon Hill had a high average PHQ rating because it had high neighbourhood satisfaction, large dwellings, and a high proportion of single housing. Only when PHQ was adjusted for these

three variables were scores for Thickwood Heights significantly lower than those of all other areas. Its positive ratings were explained by neighbourhood factors, house size, and the proportion of single family dwellings. Distance from the business centre of town and the lack of public transportation may be negative factors for those living in Thickwood Heights. Environment and housing mix "overcome" any such negative influences on residents' ratings of their housing in that area.

The low PHQ ratings given by residents of Abasand also appeared to be largely explained by differences in neighbourhood satisfaction. The observed significant negative effect of living in Abasand ($r = -0.110$, $Z = 2.15$, $p < 0.05$) disappeared when neighbourhood satisfaction was controlled (first order partial correlation of 0.036 , $F = 0.64$, $p > 0.05$), and this accounted for the low PHQ in the area. The reason that residents of Abasand did not like their housing appeared to lie in the type of neighbourhood that had evolved rather than the "physical" characteristics of the dwellings themselves.

4.6.4.3 Housing characteristics. Single housing was perceived to be of overall higher quality than all other types of housing. After adjusting for the effects of other variables in Table 20, single detached dwellings were rated 8.1 points higher than mobile homes, apartments, and other multiple family dwellings. The observed means for mobile homes (53), apartments (52) and other multiple family dwellings (56) were very similar. Single detached housing ($\bar{x} = 68$) was clearly different, and remained so after controlling for other effects.

A second "objective" characteristic of the house, the number of bathrooms, also had significant effects on PHQ. The number of bathrooms provides an indirect measure of both house size and amenities. One-way analysis of variance results showed that dwellings with one bathroom averaged 55 points, those with two bathrooms averaged 61, and those with three averaged 74. After

adjusting for the effects of other variables in Table 20, respondents scored their house 3.9 points higher for each additional bathroom.

Tenure status differences in PHQ were not significant when other factors were taken into account. The overall average PHQ score observed for those who owned or had lease-purchase agreements was 63. Those who rented averaged 54. While the observed correlation between ownership and PHQ was positive and significant ($r = 0.251$, $p < 0.001$), by the time single housing was entered into the equation the partial effects of tenure status on PHQ were not significant. The observed positive effects of ownership on PHQ appeared to be due to other housing and environmental factors: (1) neighbourhood satisfaction; (2) the size and amenities of the house; and (3) whether it was a single detached dwelling.

4.6.4.4 Respondent characteristics. Socio-demographic characteristics of the residents had relatively little independent effect on PHQ. Despite the large number of these variables that were included in the model, only the age of respondents and length of residence in the dwelling had significant independent effects on PHQ. None of the other demographic, employment, or housing cost factors had significant effects on PHQ after the seven variables in Table 20 were controlled.

The older the respondent, the higher the PHQ. This may reflect something of more realistic or practical housing aspirations, or a certain comfortableness with surroundings. The observed positive effects of age on PHQ ($r = 0.203$) were only partially explained by older residents' better neighbourhoods, and their higher proportion of single detached dwellings.

Years in the dwelling had the opposite effects of those predicted. Housing stability was expected to increase PHQ on the assumption that those who stay longer in a dwelling come to like it more. Indeed, the observed zero-order effects were positive ($r = 0.089$, $Z = 1.73$, $p < 0.05$). Those who had lived in their dwellings longer rated them as having higher quality. However, when other factors were adjusted, these effects changed markedly. The

positive effects of length of residence in the dwelling appeared to be a function of three factors: (1) neighbourhood satisfaction; (2) living in a single detached dwelling; and (3) the respondents' age. Residents with greater housing stability rated their neighbourhoods better ($r = 0.198$), were more likely to live in single detached dwellings ($r = 0.416$), and were older ($r = 0.416$). When these positive effects on PHQ were controlled, length of residence in the dwelling had significant negative partial effects ($b = -1.29$).

To put it another way, controlling for the relevant effects of the environment, the objective characteristics of the home, and the respondents' age, the effects of "mere exposure" were negative. The longer people lived in their housing the less they liked it. It may have been a mistake to assume that people who did not like their housing would move. Since only a sample of stayers is available, these effects may be the result of people feeling "trapped". Perhaps those who could move did, and that move may have been out of Fort McMurray.

4.7 SUMMARY

Fort McMurray's housing stock has grown very rapidly to keep pace with the increase in population associated with the building of Suncor and Syncrude. There were about 8600 dwellings in the town in 1979 from a start of 300 in 1961. The housing mix changed as mobile homes and apartments were added to the housing stock (11% and 18%, respectively, by 1971), and single detached housing decreased from a 1961 share of 92%, to 63% in 1971. The building of Syncrude saw a continuation of these trends until in 1979, after construction was completed, mobile homes comprised 20%, apartments 28%, other multiple family dwellings had increased to 23%, and single detached housing had fallen to 29%.

Shelter costs were high (averaging \$356 per month), despite prevalent and substantial employer subsidies to renters and owners. About 46% of the sample was subsidized, and the average rental subsidy appeared to be about \$100 per month. Subsidies were more likely to go to owners than to renters, and to those who had

higher than average incomes. However, relative newcomers (since 1977) were no more likely to be subsidized than were those who had come to Fort McMurray before 1978.

The sample had moved relatively often within Fort McMurray, and had changed house type often as well. About 60% of the sample had moved at least once within town and most (about two-thirds) of these moves involved changes in house type.

The move to Fort McMurray involved even more change. In fact, house type before the move was unrelated to house type on arrival in Fort McMurray. About one-third of the sample "gave up" single detached housing in the move to Fort McMurray, and about one-sixth had gained it.

Looking at migration cohorts in an attempt to reconstruct change, we found that between the first cohort (arrival before June of 1975) and the second (June, 1975 to end of 1977), the probability of living in a mobile home on arrival decreased from 0.45 to 0.21. The probability of getting single detached housing on arrival did not decrease until the latest cohort (after 1977), when it dropped from 0.26 to 0.09. The probability of occupying multiple family dwellings on arrival increased across all three cohorts (0.28 to 0.54 to 0.69).

The cohort which arrived earliest were equally likely to wind up in a single family housing (about 0.51), no matter what kind of housing they had occupied on arrival. The probability of eventually moving into single family housing fell sharply (0.32 for those in multiple family housing, 0.07 for mobile home dwellers) for the cohort who arrived during Syncrude's construction. These probabilities decreased for the cohort who arrived after Syncrude's construction: 0.06 for those who began in multiple family housing, and 0.03 for those in mobile homes. These cohort differences involve both a decrease in the availability of single detached housing, and less opportunity (time) to have moved for residents in more recent cohorts.

After adjusting for the length of residence in Fort McMurray (and a number of other factors as well), it was found that respondents in single detached housing had lived in their residences longer than those in multiple family dwellings. Residents of mobile homes were less stable. Ownership and lower shelter cost increased housing stability, as did employment by Suncor or Syncrude. Beyond these effects, subsidies per se did not have an influence on mobility; neither did house size or amenities.

Observed differences in housing stability between sub-areas within Fort McMurray, particularly the newer areas of Beacon Hill, Abasand Heights, and Thickwood Heights, were in large measure accounted for by differences in the demographic and housing composition of the areas. Controlling for house type and other factors, residents of Waterways showed the lowest housing stability. Those in Greogire Park and Lower Town showed the highest stability.

Older residents, those with a past history of stability, and those with more household possessions, exhibited higher housing stability. All of these environmental, housing and individual factors together explained 56% of the variation in years residence in the dwelling.

Despite improvements in housing stocks, there was little evidence of improvements in "satisfaction" with housing. If anything, satisfaction appeared to have decreased between the February 1978 survey of Housing and Public Works, and the June 1979 AOSERP survey. Factors external to the dwelling such as landscaping, space for children to play, privacy, space outside, and noise were judged to be of poor quality by over one third of the 1979 sample.

Mobile home renters in Greogire Park and Waterways, mobile home owners and renters in Lower Town (altogether 15% of the sample), and those who rented townhouses and duplexes in Abasand (7% of the sample) all judged their housing to be of overall poor quality. Apartment dwellers in Lower Town (15% of the sample) averaged only barely above the mid-point on the PHQ scale (51 out of 100 points).

Overall, 34% of the sample reported that they perceived their housing to be of poor quality, and 10% reported that their dwellings were very poor (below 33 out of 100 points).

Multivariate analysis showed that differences in PHQ were a function of perceptions of the environment, particularly neighbourhood satisfaction. Perceptions of a better market position also increased PHQ. Location in Thickwood Heights, the area farthest from downtown, turned out to be a negative factor after environmental perceptions and objective housing characteristics were controlled. Larger, single dwellings with more amenities were more highly rated, and older residents rated their dwellings higher. Surprisingly, it was discovered that, other things being equal, the longer residents had lived in their dwellings the lower quality ratings they gave to them.

5. USE AND EVALUATION OF COMMUNITY SERVICES

5.1 INTRODUCTION

All communities experience some difficulties in developing and maintaining comprehensive, efficient service-delivery systems, but in rapidly growing communities these problems become particularly acute. The prospect of demand for services outstripping the ability to provide them constantly faces the administrators and planners of growth centres. Relatively isolated resource towns, whether or not they are expanding rapidly, also tend to have service-delivery problems (Lucas 1971; Riffel 1975; Himmelfarb 1976). In such communities it is often the privately-provided services (e.g., good shopping facilities, legal services) which are difficult to obtain.

Since Fort McMurray's growth has been unusually swift and because the town can be characterized as a relatively isolated resource development community, the experience of service-delivery problems would be expected. The most severe difficulties appear to have been encountered while the Syncrude plant was under construction (Hobart et al. 1979:240; Nichols and Associates 1979). The town's rapid population growth was intensified by the influx of thousands of construction workers. Although this labour force was lodged primarily outside of the town, the services provided within it, both public and private, were severely overextended. From an administrative perspective, "In Fort McMurray during the 1974 to 1978 construction boom, 'seat-of-the-pants' management became a requirement, not an alternative." (Jones nd:1).

Such service-provision problems are one of several costs of industrial development which can outweigh the financial benefits received by the host community (Summers et al. 1976:102). While some of the fiscal burden may be transferred to individual tax-paying residents, there are other more direct effects on community members. In brief, the presence or absence of services typically found in more mature urban areas, and the quality of those services that are provided are both important factors in the process of

human adjustment in new and growing communities. In its simplest form, an hypothesis linking these constructs would propose that resident satisfaction with and adjustment in a community should covary positively with satisfaction with community services.

An emphasis on subjective evaluations of services does not mean that the survey results discussed are unrelated to objective living conditions in Fort McMurray. While some exceptions may be encountered it can generally be concluded that subjective appraisals and objective measures of service quality are positively correlated (Warner and Burdge 1979). However, it is the effects on individuals of adequate or inadequate community services which interest us here. Hence, the focus of this section is on subjective indicators of the quality of community services.

Description of service use patterns is, consequently, of secondary importance. However, since the use of various services may affect their evaluation, service-use requires at least a brief discussion. More detailed inspections of service-use patterns in Fort McMurray can be found elsewhere (Hobart et al. 1979; Nichols and Associates 1979). Responses to a further set of questions about specific service-related problems encountered in Fort McMurray are presented before actual service evaluations are assessed. In effect, these questions produce a second group of subjective evaluations of services since respondents must determine whether their experiences have been problematic.

5.2 LEVEL OF USE OF COMMUNITY SERVICES

5.2.1 Health, Social, and Municipal Services

Direct questions about use of eight Fort McMurray community services within the past 12 mo were answered by respondents with simple "yes" or "no" answers. If respondents had not lived in Fort McMurray for a full year, they were instructed to answer from the time that they had been resident in the community.

Table 21A contains a listing of these eight services rank ordered by the percentage of the total sample who reported having used them within the past year.

Some services were clearly used more often than others. Over 50% of this sample reported having used the hospital's emergency services within the past year. This indication of heavy use parallels frequently heard comments about Fort McMurray's hospital emergency services having to substitute for doctors in private practice. In a town with many young families, it also is not unusual to find relatively heavy use of public health facilities. Almost 40% of the survey respondents answered "yes" to this question.

Over one-third of these Fort McMurray residents had called the police within the past year. Recognizing that these calls would vary in the severity of the problem being reported, this still appears to be a large proportion of the sample. However, the fact that crime rates in Fort McMurray have typically been about twice as high as for the total province (Hobart et al. 1979:122) adds to the credibility of this self-report measure of police service use.

Approximately one-fourth of the sample answered "yes" to both the "utility maintenance" and the "post-secondary courses" items. In discussions with interviewers after the survey was completed it was found that the second of these questions had been interpreted fairly loosely. Thus, the 22.7% of the sample includes some respondents who were reporting "craft" or "hobby" courses rather than more strictly defined post-secondary courses. Less than one-tenth of the sample had used counselling, ambulance, or fire protection services in Fort McMurray in the year preceding the interviews.

5.2.2 Use of Recreation and Entertainment Facilities

Participation in some forms of recreation is contingent on the provision of the necessary facilities. Thus, an inspection of recreational activities of Fort McMurray residents can serve as an indirect assessment of use of certain community services.

Table 21. Community service use and participation in recreation and entertainment activities.^a

<u>A. Community service use, in past year</u>		<u>Percent reporting use</u>	
Used hospital emergency service		56.6	
Used public health service		39.4	
Called police		34.4	
Used utility maintenance services		24.6	
Took post-secondary course		22.7	
Used counselling services		7.3	
Used ambulance service		7.3	
Called fire department		6.9	

<u>B. Recreational activity, in season</u>	<u>Never/ seldom (%)</u>	<u>Sometimes (%)</u>	<u>Often/ very often (%)</u>
Individual exercise or jogging	32.6	28.8	38.6
Fishing/hunting, camping or hiking	37.0	33.6	29.4
Skiing, snowshoeing or skating	65.1	20.5	14.5
Non-team sports (e.g., tennis)	64.1	19.8	16.1
Swimming	66.2	20.3	13.5
Team sports (e.g., hockey)	71.4	12.1	16.5

<u>C. Entertainment activity, in past month (no. of times)</u>	<u>($\bar{x}$)</u>	<u>(S)</u>	<u>Median</u>	<u>% answering 0</u>
Cultural activities	0.414	1.230	0.138	77
Movies	0.749	1.447	0.303	62
Bar or lounge	2.135	3.672	0.827	44
Restaurant	4.087	6.640	2.182	22

^a Sample sizes ranged from 423 to 427 for these questions.

Respondents were asked how often, in season, they participated in a variety of recreational and exercise activities. Roughly one-third of the sample chose "never" or "seldom" as their response to the individual exercise item and the fishing, hunting, camping, or hiking item (Table 21B). About two-thirds answered similarly with respect to the four recreation activities which might require some community-provided facilities. Recreation which does not require such facilities appears to be preferred.

Comparative data from other communities are not available to test the obvious hypothesis: residents of communities situated in relatively uninhabited northern parts of the province will be more likely to be outdoors oriented in their recreational interests. However, these survey results reveal that, in 18% of the 430 sampled households, someone owned a boat (with or without a motor), 22% of the respondents reported owning a camper-van, trailer, or truck-camper, and 15% owned one or more skidoos. The outdoor recreation orientation of this community is further demonstrated by the moderately high proportion of respondents who reported golf clubs (21%) or skis (28%) in the household. A full 50% of the sample admitted having rifles or shotguns in the dwelling.

In order to gauge Fort McMurray residents' use of community entertainment facilities, questions were asked about frequency of participation in various activities in the month previous to interviewing. Respondents reported an average attendance at cultural activities (e.g., plays, concerts) of 0.41 times in the month (Table 21C). Movie-going was somewhat more frequent ($\bar{x} = 0.75$ times per month), but 62% of the interviewees had not seen any movies in the month prior to the interview. By way of comparison, 70% of Matthiasson's 1969 sample reported going to the movies more than once a month. The introduction of television service to Fort McMurray since then has produced some obvious changes.

In 1979, going to a bar or lounge was clearly a more popular form of entertainment ($\bar{x} = 2.14$ times per month) than was attendance at movies. Since responses to the question about

"eating out in a restaurant" include non-entertainment restaurant use, the even higher average ($\bar{x} = 4.087$) is understandable.

The statistics presented in this table highlight sizeable differences within the community in entertainment facility use. Some respondents used these facilities extensively, some used them very little. In fact, responses of "0" were received frequently for cultural activities (77% of all respondents), for movies (62%), and for patronizing of bars or lounges (44%).

5.2.3. Differential Patterns of Service Use

There are no clearly identifiable differences between the service and facility use patterns of Fort McMurray and other urban centres. For example, both young (under 25) and older (over 45) respondents were significantly less likely to use the hospital emergency service and public health service. These are obviously groups less likely to have young children who might require extra medical attention. In fact, number of children in the household was significantly, positively correlated with use of police, ambulance, hospital emergency, and public health services.

Younger respondents were significantly more likely to report athletic participation and frequent visits to a bar or lounge. Significant differences by sex were identified in use of health-care services (women reported more frequent use), and in athletic activities and bar/lounge patronizing (men were more active). Better educated sample members reported taking more post-secondary courses, attending more cultural activities, and participating in athletics to a greater extent. All of these differences were statistically significant at the 0.05 level or beyond. This pattern of results provides some confirmation for the argument that, although Fort McMurray's overall level of service use may differ in some ways from other urban centres, the differences within the community are not particularly unusual. This indication of normalcy should add validity to the subjective evaluations of community services provided by Fort McMurray residents.

Because a substantial portion of the sample had lived in Fort McMurray for less than one year and because the questions about service use referred to the past 12 mo, the total sample results (Table 21A) are potential underestimates of service use. Short-term (less than 1 year) residents of Fort McMurray would have a lower probability of having had need to use any particular service. Hence, the percentages for medium-term and long-term residents shown in Table 22A are probably more accurate estimates of service use. A second reason for presenting these particular results is that a crude comparison of the behaviour of shorter and longer term residents of the community is possible. Since service evaluations are expected to vary with length of time lived in Fort McMurray, it is important to see if use of services and recreation/entertainment facilities also is a function of length of residence.

As expected, short term residents who would have been less likely to have needed a particular service within the one year time frame of the question, reported less use. The significant differences in use of several services displayed in Table 22A are, in part, a function of this. Comparing the medium and long-term residents, the considerably lower use of hospital emergency, public health, police, and educational services by longer-term residents is noted. These differences can probably be accounted for by the fact that respondents who have lived longer in the community tend to be older (and have fewer children at home). Use of utility maintenance, fire department, ambulance, and counselling services does not differ a great deal between these two groups of respondents.

The increase in participation and use of facilities between the first and second cohorts is not found (Table 22B, C), perhaps because questions about recreation and entertainment were not phrased with reference to the previous year. Instead, a substantially lower amount of athletic participation for the longest term residents is found. Again, the difference in average age of these cohorts is probably the explanation. The same pattern

Table 22. Service use, recreation and entertainment activities by length of time in Fort McMurray.

	Years in Fort McMurray		
	<1	1 - 4	4+
A. Community service use, in past year:	Percent reporting use		
Hospital emergency service	38.1	67.9	56.4 ^a
Public health service	26.3	47.2	36.6 ^a
Police	23.7	41.5	32.7 ^a
Utility maintenance	22.0	24.5	27.7
Post-secondary courses	18.6	25.0	19.8
Counselling services	7.6	7.3	6.9 ^a
Ambulance	0.9	9.4	6.9 ^a
Fire department	2.5	8.3	7.9
B. Recreational activity, in season: ^b	Means		
Skiing, snowshoeing or skating	2.12	2.12	1.85
Non-team sports	2.11	2.21	1.77 ^a
Swimming	2.38	2.17	1.76 ^a
Team sports	2.02	1.96	1.88
C. Entertainment activity in past month:	Means		
Cultural activities	0.30	0.44	0.48
Movies	0.84	0.75	0.63
Bar or lounge	2.96	1.88	1.47 ^a
Restaurant	5.11	3.85	3.43

^a Differences are statistically significant ($p < 0.05$)

^b Responses were coded as follows: never = 1; seldom = 2; sometimes = 3; often = 4; very often = 5.

(and explanation for it) applies to frequency of movie-going, and use of restaurants and bars or lounges. However, there is a small, non-significant increase in participation in cultural activities with length of residence. Older, more settled community members appear to engage in more of these activities.

5.3 SERVICE-RELATED PROBLEMS ENCOUNTERED IN FORT MCMURRAY

"We would like to know something about the little things that go wrong in day-to-day life. Have the following been a problem to you in Fort McMurray in the past twelve months?" Respondents answered "yes" or "no" to a series of items following this introduction. Again, if they had not lived in the community for a full 12 mo they were instructed to answer with respect to their shorter period of residence. The responses to these items are ranked by the percentage of affirmative answers (Table 23). Table 23 also displays the responses within categories of length of residence in Fort McMurray.

The lower percentages in the shortest time cohort, for all but the last two items presented, demonstrate again the under-estimates produced by including responses from residents of less than one year in analyses of questions with 1 year frames of reference. Members of this cohort have had less time to encounter problems in the community.

Finding good entertainment was considered problematic by over 40% of this sample of Fort McMurray residents. Comparing the middle and longest term cohort, it is apparent that such problems may become less severe as individuals become familiar with the community. The same explanation can apply to finding good recreational activities. About 35% of the residents of one to four years answered "yes" to this item, but only 27% of the longer term residents answered affirmatively. It was noted earlier that longer term residents of this community were less likely to participate in athletic activities. This factor may also partially account for the lower percentage of this cohort who view finding good recreational activities as problematic.

Table 23. Service-related problems by years lived in Fort McMurray.

Community Service	Years in Fort McMurray			
	< 1 (n = 112)	1 - 4 (n = 195)	4+ (n = 101)	Total (n = 408)
	Percent encountering problems			
Finding good entertainment (movies, dancing, plays)	34.2	49.0	36.7 ^a	41.5
Getting a car fixed	24.6	34.5	35.0	31.4
Finding good recreational activities	27.4	35.4	27.0	31.1
Vandalism, theft, problems with juveniles	28.0	34.2	28.7	30.1
Getting special medical or dental treatment	17.1	31.8	25.7 ^a	25.9
Finding a good household repairman	14.0	18.8	27.8 ^a	19.6
Cashing or writing a cheque	28.6	17.5	10.9 ^a	19.2
Borrowing money	9.3	6.7	5.0	7.1

^a Differences are statistically significant ($p < 0.05$).

About one-third of the respondents (31.4%) noted difficulties in obtaining car repair services. Ignoring those resident in the community for less than 1 year, there is no difference by length of residence. If the percentage reporting problems in this area had decreased for longer term residents, it could be concluded that shorter term residents had simply failed to find the available "good" service centres. Finding no difference leads to the conclusion that this may be a problem of supply rather than a problem of respondents' inadequate experience with the town.

Vandalism, theft, and problems with juveniles were considered to have been personally problematic by slightly less than one-third of the sample members (31%). Differences by length of time lived in Fort McMurray follow the typical pattern, but are not statistically significant. The lower percentage of long term residents considering this to be a problem may be a function of the trend for longer term residents to move out of multiple housing units into single dwellings and better neighbourhoods. An analysis of this item by area of town tends to support this explanation. The respondents from the Lower Town (27%), Beacon Hill (27%), Gregoire (26%), and Thickwood (32%) were all about average. Of the 16 Waterways respondents, 38% reported problems of this kind. However, 43% of the 58 Abasands residents interviewed in this survey reported problems with vandalism, theft and youth in general. The differences across all six areas of the town are not statistically significant, but if Abasand and the rest of the town combined are compared, the difference is large enough ($p < 0.05$) to conclude that residents of this primarily multiple dwelling area clearly have more problems of this kind. It is probably not coincidental that Abasand residents also evaluate their neighbourhoods and the quality of their housing rather negatively.

In Fort McMurray, as in many other communities, access to medical specialists appears to be difficult. About one-fourth of the sample stated that they had experienced problems getting special medical or dental treatment in the past year.

Rapidly growing communities typically also experience a shortage of skilled tradesmen. Finding a good household repairman was reported as problematic by about one-fifth of these Fort McMurray residents. Without any comparison data, it is impossible to state whether or not this means that Fort McMurray has moved beyond the "growing pain" stage of development. However, it would be expected that, as residents settled into the community, they would have less difficulty in this respect. The analysis of variance results show an opposite relationship. Only 14% of the short term residents compared to 19% of medium term and 28% of long term residents had experienced this problem. The explanation, quite simply, is probably that shorter time residents are more likely to be renters and, consequently, frequently not responsible for household repairs.

Almost 20% of the sample said that they had encountered problems in attempting to write or cash a cheque. Residents of less than 1 year were significantly more likely to answer "yes" to this question (29%), while medium term residents were somewhat less likely to do so (18%). Only 11% of the longer term residents reported cheque writing/cashing problems. They are perhaps more likely to be recognized in banks or stores, and to have up-to-date identification. Additionally, the longer term cohort is a self-selected group. Members of the group who arrived 5 years ago who would be most likely to have cheque writing/cashing problems (the unemployed and transient) may have moved, leaving behind a larger proportion of "better risk" residents. This filtering process may not yet have occurred to the same extent in the shorter term resident group.

Finally, only 7.1% of the sample members said that they had experienced trouble borrowing money. This might simply mean that a large proportion of the sample had not attempted to borrow money in the past year. The relatively high incomes received by Fort McMurray workers could reduce the necessity to borrow money. However, survey results show that 49% of the sample reported trouble saving money and 69% (of those who answered the debt question)

reported debts other than house mortgages (these results are discussed in subsequent sections). These two facts imply that some borrowing must be going on. Thus, part of the explanation of the low affirmative response may be that it is relatively easy to borrow money in Fort McMurray. Banks and lending agencies are probably quite conscious of the generally high employment rates and high salaries in the community which, together, mean lower-risk borrowers.

5.4 THE EVALUATION OF SERVICES IN FORT McMURRAY

5.4.1 Service Evaluation in 1969

The town of Fort McMurray was much smaller in 1969 when John Matthiasson (1970) surveyed its residents about the quality of life in the community. Despite this difference, some of his findings are relevant to this discussion. Matthiasson asked his respondents to choose, from a list of 10 community features, two which were "most important in making life enjoyable in a community such as the one in which you now live". "Entertainment and recreation facilities" was the most frequently chosen item, followed closely by "income in relation to cost of living", "good access to cities in the south", and "housing and accommodation". Educational, medical, and retail shopping services, religious facilities, working conditions, and communications (radio and T.V.) were less popular choices.

Matthiasson also asked respondents in his survey to choose two community features "most in need of improvement" from a reduced list (income in relation to cost of living and working conditions were excluded). Access to cities in the south, communications, medical facilities, and entertainment and recreation were chosen much more often than the other four possible responses. Since that time, improved road and air service to the town has reduced the problem of difficult access to the south, and the introduction of television has effectively dealt with the communication problem.

Medical facilities were still being considered inadequate by the 1976 Fort McMurray residents interviewed by Van Dyke and Loberg (1978). However, the completion of the town's new hospital reduced negative evaluations of health services. AOSERP survey results show that a reasonable number of the 1979 residents consider finding good entertainment (45%) and good recreation (31%) as problematic. Using this and the previous assessments of service quality in this town (Matthiasson 1970; Van Dyke and Loberg 1978) as a base, it is hypothesized that entertainment/recreation and, perhaps, medical services would be evaluated relatively negatively.

5.4.2 Service Evaluations in 1979

The quality of 17 Fort McMurray services was assessed by the 1979 AOSERP sample members using a seven-point (very poor to very good) scale. The results of this evaluation are displayed in Table 24, ranked by degree of positive evaluation. Higher mean values signify more positive evaluations.

There is a very clear break in the evaluations of these services. With the exception of animal control and flood control, the seven most poorly rated services are all related to maintenance and design of streets and sidewalks. The average evaluation scores for this group of services range from 2.28 to 3.74, whereas the average scores for the remaining ten services range from 4.86 to 5.85.

It had been expected that entertainment/recreation and perhaps medical facilities would be rated poorly. Neither of these fall within the poorly evaluated group of services. Less than 20% of all sample members rated either recreation or health services negatively. While a larger proportion report problems finding good entertainment and recreation, the evaluations of those services that are present are not particularly negative. As for health services, the new hospital is probably the major reason for the relatively positive evaluations.

Table 24. Evaluation of services.

Service	Service Evaluation ^a					$\bar{x}$
	Very Poor (%)	Poor (%)	Neutral (%)	Good (%)	Very Good (%)	
Telephone	1.7	3.1	10.4	47.8	37.1	5.85
Police protection	1.7	4.7	14.9	48.8	30.0	5.57
Fire protection	1.2	6.9	19.3	47.0	25.7	5.40
Shopping	1.4	8.8	10.6	57.6	21.7	5.37
School services	0.9	8.7	22.2	45.0	23.2	5.30
Library	1.7	7.1	28.4	44.5	18.4	5.12
Garbage collection	4.5	13.4	15.8	47.7	18.6	5.02
Recreation	2.8	14.0	17.3	46.2	19.7	5.01
Health services	3.8	15.4	17.3	43.7	19.9	4.93
Social services	2.4	5.7	36.1	43.7	12.1	4.86
Sidewalks & backlanes	19.3	22.1	21.2	30.2	7.1	3.74
Flood control	21.2	26.4	28.1	20.4	3.8	3.36
Downtown parking	21.3	35.0	16.8	23.1	3.8	3.29
Traffic lights	23.1	31.7	20.5	20.2	4.5	3.29
Snow/ice removal	28.9	31.0	19.7	18.0	2.4	2.97
Street repair	42.6	34.3	12.7	9.7	0.7	2.33
Animal control	47.6	29.0	12.0	7.7	2.6	2.28

^a The average score ($\bar{x}$) was calculated from the original "very poor (1) - (7) very good" scale. In this table, "poor" represents scores of 2 and 3, 4 is considered a "neutral" score, and "good" is represented by scores of 5 and 6. Sample sizes ranged from 420 to 425 for these items.

It is the quality and upkeep of streets, traffic lights, and parking facilities which attract the most negative evaluations. Over 40% of the sample considered street repair in Fort McMurray to be "very poor", while only 10% were willing to give it a positive evaluation of any kind. There has been a noticeable change over time in Fort McMurray residents' perceptions about what is most in need of improvement in the community.

Flood control and animal control were both evaluated very negatively with 21% and 48% of the sample, respectively, rating these services as "very poor". Parts of Fort McMurray (Waterways and the Lower Town) had experienced spring flooding not long before the AOSERP survey was undertaken. Similarly, a series of incidents where children had been bitten by stray dogs had been reported in the local newspaper only a week before interviewing began. Thus, the public attention focused on these two (relatively absent) services may have been partially responsible for the consensus about their quality, despite the fact that only small portions of the Fort McMurray population would have been directly affected. On the other hand, the negative perceptions of streets, sidewalks, traffic lights, and parking are, almost certainly, a product of first-hand experiences with these services.

Turning to the more positively evaluated services, results show that, along with recreation and health services, police and fire protection, schools and libraries, social services, telephone service, shopping facilities, and garbage collection are all rated relatively highly. There appears to be some uncertainty among respondents as to the quality of social services and library facilities (high percentages choosing the neutral "4" response). However, less than 20% of the sample gave negative evaluations to any of these community services.

5.4.3 Differential Patterns of Service Evaluation

Having discovered that some Fort McMurray services are evaluated much more positively than others, a second question can be addressed: Are services evaluated differently by different groups

of Fort McMurray residents? The search for correlates of service evaluation becomes tedious if all 17 services are analyzed in detail using a variety of independent variables. Instead, only the services evaluated most negatively by Fort McMurray residents (see Table 24), including social, medical, and recreational services but excluding flood control, are discussed. Flood control is omitted since significant differences by sub-sample were not found. As was noted earlier, previous studies of Fort McMurray suggest that medical and recreational services would be evaluated relatively negatively. Since the 1979 AOSERP survey results fail to support these hypotheses, the next step would be to see if only certain sub-populations are especially critical of these services. The following analysis and discussion focus on the effects on evaluations of: (1) service use; (2) experience with other resource towns; (3) length of residence in Fort McMurray; and (4) area of residence within the community.

5.4.3.1 Use of services. The possibility that use of services may influence subsequent evaluations has been mentioned several times in this section. Evaluations of recreation facilities are not found to be significantly correlated with frequency of participation in team sports ($r = 0.01$) or non-team sports ($r = 0.01$). Having used the ambulance ($r = 0.01$) or hospital emergency services ($r = -0.02$) in the past year does not significantly influence evaluations of health care services. Use of counselling services and evaluation of social services in general are also not significantly correlated ($r = -0.07$). Only the use of public health services is significantly associated with health service evaluations ($r = 0.13$; $p < 0.01$) and even this relationship is weak.

Police and fire department services are not discussed in this section. Nevertheless, the finding that use and evaluation of these services are also not significantly associated ($r = -0.02$ for police services and $r = 0.01$ for the fire department), allows a somewhat less tentative conclusion that, in general, service use is

not significantly correlated with service evaluation among these Fort McMurray residents. Opinions of respondents who have used certain services do not differ systematically from the evaluations of those who have not had need to use them. If such systematic differences had been found, a more cautious interpretation of the opinions of non-users would have been necessary.

5.4.3.2 Experience with other resource communities. Underlying our emphasis on subjective evaluations of services is the assumption that residents' personal assessments would correspond relatively closely to more objective measures of service quality. Research results from other locales have demonstrated that objective characteristics of service-delivery systems are better predictors of service evaluations than are personal characteristics of survey respondents (Warren and Burdge 1979). However, some variation in evaluations might still be a function of the expectations of community residents. Since almost all of Fort McMurray's residents moved to the town as adults, their experiences with service-delivery systems in other communities might influence evaluations of Fort McMurray services via the expectations brought with them.

Survey respondents who had lived in other resource development communities could have expectations of Fort McMurray different from those of respondents without such experience. The "experienced" group might expect relatively poor services and, on the basis of this, respond less negatively in their evaluations. Inexperienced residents would base their more negative evaluations on comparisons with more mature urban centres. An alternative hypothesis would propose that experienced residents would expect relatively good services because, unlike many other resource towns, Fort McMurray is quite large and has received a lot of planning attention from various levels of government. Inexperienced respondents, knowing that they were moving "north", might expect living conditions more primitive than those found in Fort McMurray. The outcome would be more negative evaluations from experienced residents.

Respondents' answers to the question: "Have you lived in any other remote resource communities?" allow a test of these alternative hypotheses. The second receives more support. Survey respondents who answered "yes" evaluated all but one of the nine "problem" services more negatively. Only recreation services were assessed more positively ($\bar{x} = 5.06$ on the 1 to 7 scale) by this group than by the inexperienced group ($\bar{x} = 4.98$), but the difference in average scores is not statistically significant. Health services (4.69 vs. 5.04), traffic lights (3.01 vs. 3.42), snow and ice removal (2.72 vs. 3.08), and animal control (2.02 vs. 2.39) were all rated more poorly ($p < 0.05$) by respondents with experience in other resource development communities. Average score differences for social services, sidewalks and back lanes, downtown parking, and street repair were all in the same direction (lower for the experienced group) but were not statistically significant. These results suggest that residents' expectations can influence service evaluations. Furthermore, it appears that the expectations of those who have lived in other resource towns may be higher than the expectations of those who have not.

5.4.3.3 Length of residence in Fort McMurray. The length of time a respondent had lived in Fort McMurray was found earlier to have some effects on service use and also on perceptions of problems in service availability. This factor is introduced here, again as an independent variable, to see if service evaluations differ systematically by length of time in the community. Evaluations of the nine services discussed above are graphically displayed in Table 25. Some interesting evaluative differences appear in a comparison of the responses of short, medium and long term residents.

The most obvious hypothesis linking service evaluation and length of time in the community would predict more positive evaluations from longer term residents. Evaluations of health services and social services correspond to this prediction, although only the second of these two relationships is statistically

Table 25. Average service evaluation^a by length of residence in Fort McMurray.

Service	Years in Fort McMurray		
	< 1 (n = 118)	1 - 2.5 (n = 129)	2.5+ (n = 101)
Recreation	5.22	4.75	5.08 ^b
Health services	4.84	4.86	5.05
Social services	4.59	4.91	5.01 ^b
Sidewalks/back lanes	3.74	3.64	3.74
Downtown parking	3.76	3.31	2.94 ^b
Traffic lights	3.41	3.02	3.43
Snow/ice removal	3.51	2.66	2.76 ^b
Street repair	2.60	2.12	2.21 ^b
Animal control	2.58	2.25	2.04 ^b

^a Means are calculated from the seven-point "very poor (1) to (7) very good" scale.

^b Differences are statistically significant ($p < 0.05$).

significant. Earlier it was noted that use of health and social services was not correlated with their evaluations. The relationships displayed in Figure 6 may be a product of longer term residents' greater likelihood of having discussed these services with other community residents.

Recreation service evaluations are significantly lower for medium term residents than for short or long term residents of Fort McMurray. Medium term residents are more likely to have young children in the household and, hence, may be more critical of available recreation facilities. An analysis reported earlier in this section also showed a higher proportion of medium term residents reporting problems in finding good recreational activities. The same curvilinear relationship between length of residence and service evaluation is found for sidewalks and back lanes and for traffic lights but the differences between cohorts are not significant at the 0.05 level. For both, ratings are uniformly low.

Four of the five services which received the lowest overall assessments from respondents have a similar form of relationship with length of residence in the community. With the exception of traffic lights, evaluations of these services are highest among short term residents, and then significantly lower among medium and long term residents. Evaluations of downtown parking and animal control are even lower for long term residents (as compared to medium term), whereas assessments of snow and ice removal and street repair are only slightly higher. The explanation for these patterns may be that greater exposure to these poorly provided services leads to stronger negative reactions.

5.4.3.4. Area of town. It is important to consider whether residential location within the community is a determinant of service evaluations. This factor is potentially of most importance to services (e.g., road repair) which could be provided inadequately in some area and relatively adequately in others. Evaluations of such services could vary by area of town whereas services such as

downtown parking would not be expected to do so. Average evaluations of the five services relating to streets and sidewalks, categorized by Fort McMurray locale, are shown in Figure 7. The average evaluation scores for each service in each area have been transformed into values on a scale ranging from zero to 100.

Significant differences by area of town would not be expected, and are not found, for downtown parking. Such differences might be expected, but do not appear, for snow and ice removal and for street repair. Both of these services are evaluated much the same (i.e., poorly) by respondents living in all areas of Fort McMurray.

Beacon Hill residents clearly are much more satisfied with their sidewalks and back lanes. Their average score for this service is 68 out of a possible 100. Waterways respondents, on the other hand, are very negative in their evaluation of this service with an average score of 26 on the same scale. Most people familiar with Fort McMurray's physical appearance would, no doubt, recognize the validity of these different subjective evaluations. Thickwood Heights respondents give highest ratings to traffic lights ($\bar{x}$ = 51 out of 100), but even these are not particularly high. Poorest evaluations are provided by residents of Abasand Heights ($\bar{x}$ = 23 out of 100), possibly because their access to all other areas of the town is via a difficult intersection with Hwy. 63 (see Figure 2).

5.5 SUMMARY

Rapidly growing communities and resource development towns both tend to encounter service-delivery problems. Fort McMurray fits both of these descriptions so problems in the provision of community services are to be expected. Since individual satisfaction and adaptation are influenced by the general quality of life in the community, an understanding of the process of human adjustment in Fort McMurray can be improved through inspection of the use and evaluation of community services.

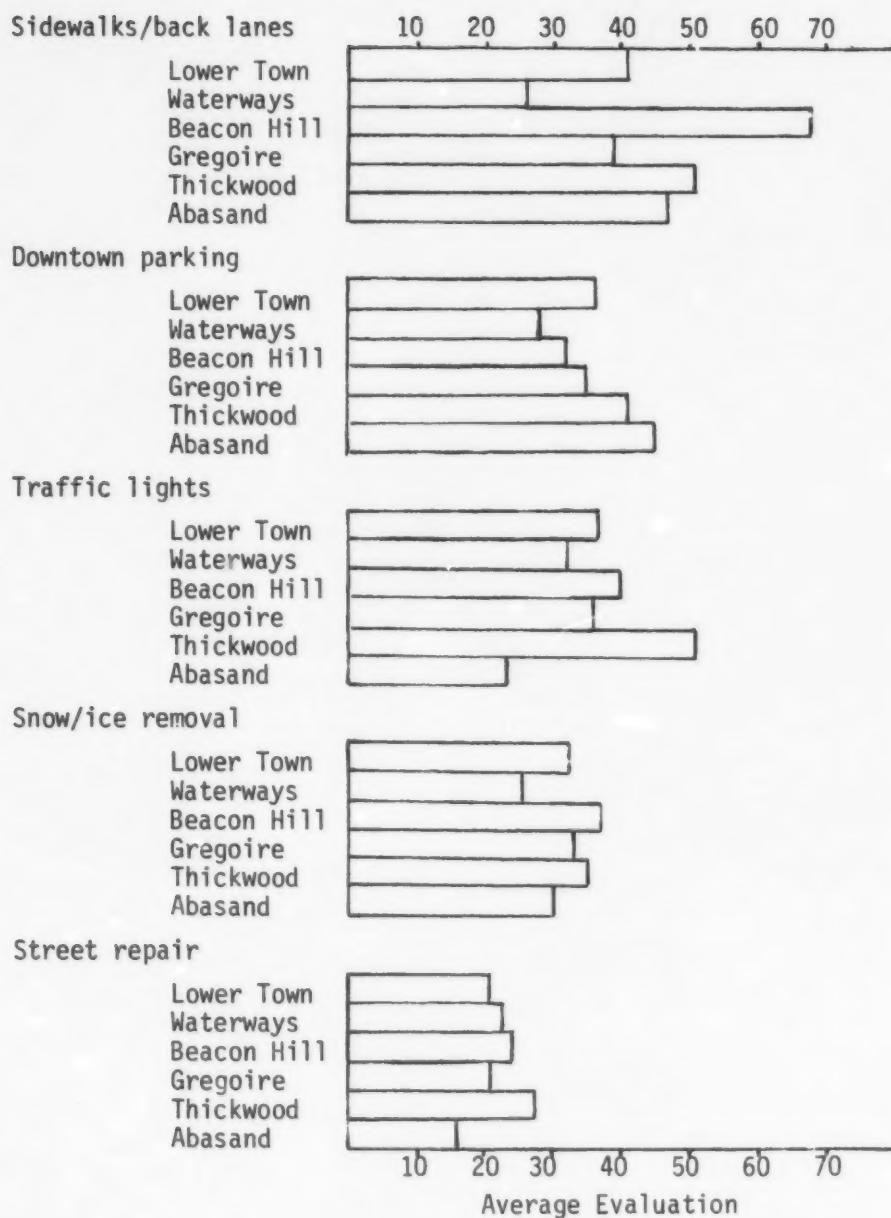


Figure 7. Evaluations of streets and sidewalks by area of town. Original scores (very poor (1) to (7) very good) were transformed to a 1 to 100 scale. Differences are statistically significant ($p < 0.05$) for sidewalks/back lanes and for traffic lights.

Hospital emergency and public health services both appear to be used quite frequently in Fort McMurray. Recreational activities which are not contingent on the provision of community facilities are preferred by this sample of respondents. They are also considerably more likely to report use of bars, lounges, or restaurants than attendance at movies or cultural events such as plays or concerts. Differential patterns of service use within the community are like those typically found in other urban settings. For example, respondents with children make more use of medical facilities, more educated respondents are more likely to attend cultural events, and men are more likely to participate in athletic activities.

Over 40% of the sample stated that finding good entertainment in Fort McMurray was problematic. About one-third agreed that getting a car fixed, finding good recreational activities, and dealing with vandalism, theft, and juveniles in general were difficult. Abasand Heights residents (who also reported low satisfaction with their housing) were most likely to view vandalism as problematic. Roughly one-third of the respondents said that finding special medical or dental treatment had been a problem in the past year. Finding good household repairmen and cashing/writing cheques were considered problematic by about 20% of the sample. Only 7% said that borrowing money had been a problem for them in the year previous to the interview.

Residents of Fort McMurray surveyed in previous studies felt that medical services and facilities were most in need of improvement. However, health services were assessed relatively positively by 1979 residents of the town. The completion of the new hospital is, no doubt, partially responsible for this. Flood control and animal control, as well as five items related to design and maintenance of streets and sidewalks in the town, all received negative evaluations compared to the ten other community services considered in this study.

Use of specific services was found to be unrelated to evaluation of these services. However, a similar conclusion is probably not applicable to evaluations of streets and roads. Respondents who had lived in other resource development communities were more likely to evaluate Fort McMurray services negatively. This suggests that they may have had higher expectations of the quality of life in Fort McMurray than did current residents without previous resource town experience.

While health and social services were evaluated more positively by longer term residents, most of the streets and roads-related items received their most negative evaluations from longer term residents who, obviously, had the most experience with them. Finally, although street repair and snow/ice removal received consistently poor ratings, traffic lights were evaluated most positively by Thickwood Heights residents and least positively by Abasand Heights respondents. Sidewalks and back lanes were evaluated most negatively in Waterways and most positively in Beacon Hill.

6. WORKING IN FORT McMURRAY

6.1 INTRODUCTION

6.1.1 The Structure of the Local Economy

From a small, regional trade and service centre with important rail and river links to the north, Fort McMurray has undergone a complete metamorphosis. The construction of Suncor and Syncrude saw massive infusions of men and materials that overwhelmed a town with little reserve social infrastructure. The impact of actual plant construction was mitigated by housing most of the construction labour force at the project site. Even so, the construction industry was the largest employment sector in Fort McMurray at the height of the plants' construction.

Fort McMurray changed again as construction ebbed and direct operating employment increased. One dominant fact remains, Fort McMurray exists on oil industry production for southern markets. The community is also heavily dependent on food and supplies imported from the south. It grows or manufactures almost none of its own.

6.1.2 The Individual and the Labour Force

Better jobs and higher incomes are the main reasons that people come to Fort McMurray (Matthiasson 1971; Larson 1979), a situation that appears to be "normal" in resource based communities (Jackson and Poushinsky 1971; Riffel 1975; Lucas 1971). Residents believe that people come to get rich quick, because they could not "make it" elsewhere, and to begin a new life (Van Dyke and Loberg 1978). Again, these perceptions appear to be common in other similar communities (Porteous 1976).

How much upward occupational mobility has there been for people who came to work in Fort McMurray? Perhaps they were able to get jobs they could not get elsewhere. Were they able to take advantage of their experience and their skills? It is clear that the building of Suncor and Syncrude has created employment

opportunities. What circumstances surround moving to Fort McMurray and finding work and how has this affected individuals? Here this question is assessed in terms of individuals' occupational status attainment. Succeeding sections will examine income and consumption as well as the quality of work.

Resource communities reputedly have experienced severe problems providing adequate employment opportunities for women (Riffel 1975; Larson 1979). How has the building of Suncor and Syncrude affected labour force participation (LFP) for women, and to what degree are employed women working in traditionally "female" jobs (retail, service, teaching)?

The analysis begins with a brief examination of four aspects of Fort McMurray's industrial and occupational structure: (1) the history of LFP for men and women; (2) the changing industrial composition of the labour force; (3) accompanying changes in the occupational composition of the labour force; and (4) differences in employment by sex. A number of aspects of individuals' experience in the labour force such as employment history, moving and finding a job, and occupational mobility are then discussed.

6.2 LABOUR FORCE PARTICIPATION

The labour force in Fort McMurray has grown from 330 persons in 1969 to 11 278 in 1979. Growth rates (23% per annum) were similar in the 1960's and 1970's, and exceeded population growth as population composition changed (smaller households), and LFP rates for the population 15 years and older increased (Nichols and Associates 1979:60).

With the building of Suncor (1963 to 1968), the male LRP increased substantially (Figure 8). Over the same period, comparable rates for Alberta were relatively constant at 80.9 in 1961, and 80.5 in 1971 (Nichols and Associates 1979:61). Female LFP in Fort McMurray increased 94% from 20.4 to 39.6 over the same period. This represented more than twice the rate of increase experienced by the province as a whole (31.0 to 44.4). In short,

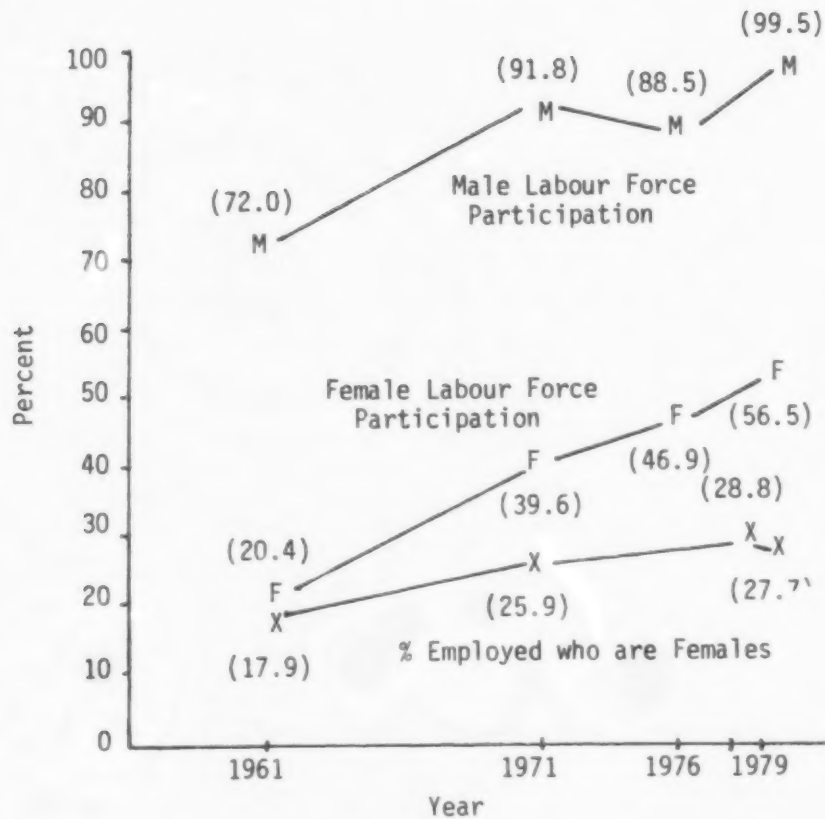


Figure 8. Labour force participation by sex: Fort McMurray, 1961 to 1979. 1979 estimates for labour force participation are from sample survey estimates for population not in school, 17 years and older. Figures for 1961, 1971 and 1976 are adapted from Nichols and Associates (1979:61) from Census of Canada figures. Estimates of % employed who are female for 1961 and 1971 are from D.B.S. in Nichols and Associates (1979:74). 1978 and 1979 data is from New Town of Fort McMurray Municipal Census 1978, 1979.

the building of Suncor resulted in a vastly increased labour force, much higher participation rates, and a higher proportion of women in the labour force (Figure 8).

After 1971, male LRP appears to have stabilized well above the Alberta rate of 82.6 (1976). This is itself higher than the rate for Canada as a whole (80.3 in June of 1979). The high LFP for males estimated in the 1979 survey of Fort McMurray (99.5) probably reflects the exclusion from the sample of residents 15 and 16 years of age. Most of them are not in the labour force. For the same reason, the sample survey estimate of female LFP (56.5) is probably also high. There is, however, some indication (Figure 8) that female LFP increased through the period during which Syncrude was built (1973 to 1978).

Those with part-time employment constituted an additional 951 persons in 1979 (7.8% of the labour force). The unemployed made up 5.5%. Women held 77% of the part-time jobs and were over-represented among the unemployed. Results from the 1979 Municipal Census show that about 19% of the women in the labour force have part-time work outside the home, and 8% are unemployed (New Town of Fort McMurray, 1979). About 4.4% of the males in the labour force are unemployed and 2.6% have only part-time jobs. The AOSERP survey estimates of LFP for women (56.5%) were high not only because they omitted 15 and 16 year olds, but also because, in the survey, 14.5% of the women in the labour force claimed to be unemployed (out of work and looking for work).

6.3 COMPOSITION BY INDUSTRIAL SECTOR

Buse (1978:55) labelled the Fort McMurray of 1971 a "truly single enterprise community". At the time, about 36% of the labour force was employed in the mining sector (Table 26). The Fort McMurray of 1961 could have been given that same "single industry" label, but for a different industrial sector. At the time, 37% of the small labour force of 330 was employed in transportation, communication, and utilities. Fort McMurray was "a rail

Table 26. Labour force by industrial sector: Fort McMurray, 1961 to 1979.

Industrial Sector	1961 (%)	1971 (%)	1977 (%)	1978 (%)	1979 (%)
Agriculture, forestry, fishing, trapping	7.4	1.3	0.1	0.2	0.1
Mines, quarries, oil wells	2.7	35.6	22.4	39.6	40.2
Manufacturing	5.6	2.6	0.7	0.4	0.5
Construction	6.2	12.6	35.4	18.3	16.6
Transport, communications, utilities	37.0	6.9	4.8	4.1	4.1
Wholesale, retail trade	10.5	10.2	8.9	9.2	9.9
Finance, real estate, insurance	0.6	3.0	5.3	4.9	3.5
Community, business, and personal service	21.0	23.0	16.5	16.7	18.7
Public administration	<u>8.7</u>	<u>4.8</u>	<u>5.9</u>	<u>6.5</u>	<u>6.2</u>
Total (N) ^a	330	2 635	9 558	10 897	11 278

^a Data adapted from Nichols and Associates (1979:63) for 1961, 1971, 1977 and 1978 from DBS and municipal census sources. Figures for 1979 are from New Town of Fort McMurray (1979:16). The 1961 estimate for public administration is from Buse (1978:56). Totals for 1977 and 1978 do not include the unemployed. All figures include only the full-time employed. Percentages may not add to 100 because of rounding.

and waterways transportation hub to the north" (Nichols and Associates 1979:64).

The sectoral shift to both mining and construction occurred with the building of the Suncor plant. If anything, the change is understated. As usual, the figures presented in Table 26 do not include personnel resident at the Suncor construction site. This represented about 2300 workers at the peak of construction (Nichols and Associates 1979:81). Also, occupational distributions for before (1961) and after (1971) the construction of the plant do not show the impact of construction itself. At any rate, the change did not involve a decrease in the number of transport and communication workers. Indeed, their numbers increased from 120 to 160 over the decade, even while their proportions decreased markedly.

The building of the Syncrude plant saw a second shift to construction as the dominant industrial sector (35% of employment in 1977). Again, this did not include the over 4000 workers resident at the construction camp during 1977. As construction concluded, Fort McMurray's occupational structure changed again. The proportion of those employed in construction fell to 18% in 1978 and 17% in 1979. This level remains somewhat higher than that observed before the building of Syncrude (13% in 1971).

As construction slowed and Syncrude went into operation, the proportion of employees in the mining section increased to roughly 40% of the labour force (1978 and 1979). This reflects only a marginally higher concentration in the dominant industrial sector than existed before Syncrude was built (36% in 1971).

Over the whole period from 1961 to 1979, the services sector has held a relatively stable proportion of employment (42% to 43%, respectively). Agriculture, forestry, fishing, and trapping declined, particularly since the Swanson Lumber plant burned in 1974. This also contributed to the decline in manufacturing, which in 1977 was composed of four establishments: a cement ready-mix company, a bakery, and two printing and publishing outlets (Nichols and Associates 1979).

6.4 THE OCCUPATIONAL COMPOSITION OF THE LABOUR FORCE

6.4.1 General Trends

The lack of year-by-year records makes it difficult to monitor changes other than clearly discernable large shifts in the occupational structure of Fort McMurray. The construction of Suncor saw an increase of 74% in the proportion of professional, technical and kindred workers (Nichols and Associates 1979:69). There were also substantial decreases in the proportion of jobs in transport and communications. Proportions in 1971 reflect less than 30% of 1961 levels. In addition, the proportion of managerial and administrative jobs declined to less than 40% of their 1961 level.

By 1977, the large increase in the proportion of construction trades (11% in 1971 to 34% in 1977) reflected the construction induced by the building of Syncrude. This had fallen markedly by 1978 with a decrease to 709 jobs from 3082 jobs in 1977. The number of construction jobs increased again to 853 in 1979 (New Town of Fort McMurray 1979:17). This increase is not reflected in reports for industry composition (Table 26), perhaps because of increasing difficulties in coding occupations. This conclusion is bolstered by the increase in occupations "not otherwise classified" from 127 to 1978, to 630 in 1979.

The proportion of jobs in product fabrication, assembling, and repairing increased between 1978 and 1979. Professional and technical occupations also increased with the building of Syncrude, and continued to increase as the plant went into production. Clerical, sales and service occupations increased relatively rapidly from 1977 through 1979 (Table 27), but had still not regained 1971 levels. Transport and communication jobs continued to occupy a small portion of the labour force (around 4%), and material handling (labourers) constituted an even smaller portion of the work force. Other changes over the Syncrude construction period saw management and administrative jobs regain a 1961 (pre-Suncor) share of the occupational structure, only to decline somewhat following the completion of Syncrude construction.

Table 27. Labour force by occupation: Fort McMurray, 1961 to 1979.

Occupation	1961 (%)	1971 (%)	1977 (%)	1978 (%)	1979 (%)
Managerial, administrative	10.2	4.0	10.3	11.4	8.5
Professional, technical	7.1	16.7	17.5	22.8	25.5
Clerical, sales, service	29.1	34.7	24.3	29.0	28.4
Farming, fishing, forestry, mining	3.4	6.0	0.5	7.5	8.9
Crafts, production, processing, construction	31.0	30.2	43.1	23.6	27.3
Transport, communications	15.8	4.7	3.7	4.0	3.9
Labourers	<u>3.4</u>	<u>3.7</u>	<u>0.7</u>	<u>1.7</u>	<u>1.3</u>
Total (N) ^a	323	2 150	8 987	10 568	9 967

^a Adapted from Nichols and Associates (1979:69) from DBS sources for 1961 and 1971 and from the municipal census for Fort McMurray for 1977 and 1978. Data for 1979 are from New Town of Fort McMurray (1979). Crafts, etc., include all other crafts and equipment operating from 1971 on. Figures do not include occupations "not otherwise classified". For 1979 those increased from 1.3% to 5.9% of all occupations. This accounts for the slight drop in total occupations. Nichols and Associates (1979:69) note that figures for mining in 1977 appear to be inconsistent.

6.4.2 Employment by Sex

As noted above, women constitute over three-quarters of part-time employees, and are over-represented among the unemployed. Survey estimates for Fort McMurray and Edmonton (EAS 1979) show that the majority of employed women in both cities work in clerical, sales and service occupations. If we add teaching, 69% of employed women were in these traditionally "female" jobs in Fort McMurray, compared to 7% of the men. Conversely, 50% of the employed men in Fort McMurray had jobs in natural science, engineering, processing, and construction. About 5% of the employed women held such jobs according to 1979 sample estimates.

As female LFP increased over the 1970's (Figure 8), the proportion of women employed in service sector industries fell slightly (81% in 1961 and 1971 to 76% in 1978). Survey results for 1979 also show slightly lower concentration in the occupational distribution for females in Fort McMurray than is present for Edmonton (Table 28). The two largest employment groups are services and professional and technical occupations in both cases. They constitute 91% of the jobs for Edmonton females compared to 84% for Fort McMurray. In any case, Fort McMurray employment remains more diversified for males than for females, despite the concentration of men in construction and in mining industries (Nichols and Associates 1979:75), and in the craft, production, processing, and construction occupations (Table 28).

The concentration of females in certain types of occupations is not unique to Fort McMurray. Indeed, it may be so normal that residents are relatively unaware of its existence. When asked if "women have a good chance for real job equality here", only 18% disagreed. Some respondents may be emphasizing the word "chance" to discount the actual distribution of females by occupation. More likely, many see some women getting jobs in transport and construction and other traditionally "male occupations". From this they may generalize to the total occupational structure, without noting the relative absence of women in less visible male-dominated occupations.

Table 28. Occupation by sex: Fort McMurray and Edmonton, 1979.^a

Occupation	Fort McMurray		Edmonton	
	Male (%)	Female (%)	Male (%)	Female (%)
Managerial, administrative	5.2	2.7	13.2	3.8
Professional, technical	19.6	22.4	21.4	32.2
Clerical, sales, service	11.8	61.4	23.0	58.9
Farming, fishing, forestry, mining	3.1	0.0	1.4	0.0
Crafts, production, processing, construction	51.3	4.5	25.0	3.7
Transport, communications	4.2	3.6	10.5	0.7
Materials handling (labour)	3.1	1.8	3.9	0.7
Occupations NOC	<u>2.1</u>	<u>2.7</u>	<u>1.3</u>	<u>0.0</u>
Total (N)	193	112	152	129

^a AOSERP survey estimates for Fort McMurray. Edmonton percentages from the 1979 EAS.

6.4.3 Sex Differences by Employer

As expected, Syncrude was the largest employer identified in the survey (26% of those employed). It may be under-represented in survey results since the 1979 municipal census results show 33% of the employed working at the Syncrude site. However, this figure probably included some Bechtel employees. Those who worked for Suncor comprised about 13% of our sample and 14% of the municipal census.

As expected from industry and occupation distributions, women were not proportionately represented in employment by companies involved in the mining of the oil sands. All together about 58% of the employed men and 15% of the employed women worked for such employers (Table 29). Women were over-represented in employment with government and schools, and indeed in all other types of employers taken together.

6.4.4 Labour Force Structure of Fort McMurray: Summary

The building of two large oil sands plants has radically altered the structure of the local economy in Fort McMurray. In this sense it is truly a "boom town". As it stands today, the community depends on the mining of bitumen and its upgrading into synthetic crude oil. The town imports almost all of its materials, food supplies, and manufactured goods from the south.

With the building of Suncor (1963 to 1968), the local economic base changed from transport and communications to mining and oil. By the time a second oil sands plant (Syncrude) became operational in 1979, the labour force had expanded to reach over 34 times its 1961 size. Construction jobs came and went with the building of the plants, leaving about 40% of the labour force employed in mining and almost one-half of the employed working directly for Suncor or Syncrude. Professional and technical occupations grew from 7% of the labour force in 1961, to 17% in 1971 and 26% in 1979.

Table 29. Employer by sex of respondent: Fort McMurray, 1979.

Sex	Oil Companies (%)	Oil-related Companies (%)	Government (%)	Schools (%)	Other Employers (%)	Total (%)
Male	53.3 (103) ^a	4.7 (9)	4.7 (9)	0.5 (1)	36.8 (71)	100 (193)
Female	14.5 (16)	0.9 (1)	26.4 (29)	9.1 (10)	49.1 (54)	100 (110)
Both sexes	39.3 (119)	3.3 (10)	12.5 (38)	3.6 (11)	41.3 (125)	100 (303)

^a Numbers in brackets represent the number of survey respondents in that category.

Over this period of rapid growth, both male and female LFP rates have increased. From 18% in 1961, women now constitute about 28% of the full-time employed and about 33% of all employed. They also have a higher unemployment rate (8%) than males (4.4%). Although 76% of employed women remain concentrated in the service sector, this has decreased slightly from 1971 (81%).

6.5 INDIVIDUAL EMPLOYMENT HISTORIES

6.5.1 Employment Stability

Of the 430 respondents, 405 (94%) had, at some time, held a full-time job. About 71% (305) were currently employed when interviewed. As would be expected given the short time most Fort McMurray residents have lived in that community, most of the currently employed had not worked at their present jobs for very long. Fifty-five percent of the currently employed had started their present job within the past year. The average length of time on the job was 1.70 years ($S = 2.16$).

Most of the currently employed respondents (68%) had held five or fewer full-time jobs, 18% had been employed in between six and 10 jobs, and 12% had more than 10 full-time jobs behind them. Given the relative "youth" of the labour force, the average number of full-time jobs held by this group was fairly high ($\bar{x} = 5.42$). Since the average number of full-time jobs held in Fort McMurray was only 1.62, a substantial portion of the work experience of this group had been obtained outside of Fort McMurray. Also, the major share of job-changing in which these respondents had engaged had taken place prior to their move to Fort McMurray.

These 305 respondents reported being unemployed (out of work and looking for work) an average of 1.87 times. Since 162 (53%) had never been unemployed and 56 (19%) had been unemployed only once, it is apparent that this average is inflated by a small group of 86 respondents with substantial histories of unemployment

They reported an average of 5.97 periods of unemployment. Fort McMurray appears to attract those (28% of its labour force) who have relatively unstable work histories.

6.5.2 Correlates of Employment Stability

To what degree are these results simply a function of experience in the labour force, and do females show higher instability than males? Does education reduce instability? The length of time the respondent had been in the labour force would be expected to be related to both the number of full-time jobs and the total number of times unemployed. Consequently, the number of years since respondents had begun their first full-time job is used to control "time at risk" (Table 30). A small number of the 305 currently employed respondents (13%) failed to report the year they began their first full-time job, reducing the sample for this analysis to 266. Generally, those who did not answer the question were older interviewees who had difficulty recalling the year they first began to work full-time. The exclusion of this group may create a slight upward bias in both of the employment stability indicators.

6.5.2.1 Years in the labour force. As expected, length of time since first entering the labour force is significantly ($p < 0.01$) positively associated with the total number of full-time jobs. Respondents who entered the labour force within the last 5 years had held an average of 4.19 full-time jobs, compared to an average of 7.23 reported by those who had first begun full-time work more than 15 years ago. On the other hand, years in the labour force is not significantly associated with the total number of times unemployed ($p > 0.05$). Respondents who had been in the labour force for 5 years or less reported being unemployed almost as frequently ($\bar{x} = 2.08$) as those who had begun their first full-time job more than 15 years ago ($\bar{x} = 2.13$).

Table 30. Employment stability by years in labour force by sex, age, education, and years in Fort McMurray.^a

	Years in Labour Force				Years in Labour Force			
	0-5	6-10	11-15	16+	0-5	6-10	11-15	16+
	Total No. Full-time Jobs ^b ($\bar{x}$ = 5.48)				Total No. Times Unemployed ^b ($\bar{x}$ = 2.02)			
TOTAL	4.19	5.04	5.17	7.32	2.08	2.55	1.22	2.13
Sex:								
Male	5.92	5.65	5.68	7.81	3.70	3.12	1.21	2.24
Female	2.92	3.96	4.15	5.36	0.89	1.54	1.25	1.64
Age:								
≤ 29	4.32	5.77	5.37	----	2.23 ^c	2.65	2.06	----
30+	2.60	3.28	5.07	7.40	0.20	2.44	0.85	2.15
Years of Education:								
≤ 12	4.77	4.92	4.85	7.83	2.90	2.68	1.56	2.55
13+	3.28	5.32	5.55	6.79	0.80	2.46	0.81	1.59
Years in Fort McMurray:								
< 1	5.62	5.32	4.43	9.89 ^c	3.38	3.50	1.14	4.11 ^c
1 to 2.5	3.71	4.56	6.44	7.00	0.94	2.36	0.83	2.71
2.5+	2.41	4.94	4.85	7.23	1.12	1.89	1.64	1.31

^a Sample composed of 266 currently employed respondents.

^b Five cases of "many" in no. of full-time jobs and four cases in no. of times unemployed were recoded to 12 and 5, respectively.

^c Fewer than 10 cases in this cell.

6.5.2.2 Sex and age of respondent. Men had held more full-time jobs than women for all experience levels (years in the labour force). They also reported being unemployed more often in all but one of these control variable categories. Because the probability of voluntarily withdrawing from the labour force is higher for women than for men, this relationship between sex and employment stability is as expected.

However, it would be expected that age would be unrelated to employment stability once time in the labour force was controlled. The comparisons between those under and over 30 years of age (Table 30) show this to be untrue. Of this group of currently employed Fort McMurray residents, the younger respondents had held more full-time jobs and had been unemployed more often than the older group. This relationship is maintained across all applicable levels of labour force experience.

6.5.2.3 Education. The relationship between education and number of full-time jobs, controlling on years in the labour force, is not as clear and consistent as those reported above. Total number of times unemployed is, however, consistently related to education across all categories of years in the labour force. Respondents with post high school educations reported being unemployed less frequently. This difference is particularly striking in the group with the shortest time in the labour force. Respondents in this group who had post-secondary educations had been unemployed an average of 0.80 times. The less educated members of this cohort had been unemployed an average of 2.9 times.

6.5.2.4 Years in Fort McMurray. Length of residence in the community is not clearly associated with number of full-time jobs once time in the labour force is controlled. However, one comparison is worth noting. Among those respondents with five or fewer years in the labour force, there is a prominent negative relationship between years in Fort McMurray and number of full-time jobs. In

this group, short term residents (less than one year) had held an average of 5.62 full-time jobs, medium term residents (1 to 2.5 years) reported an average of 2.41. Although all four of the relationships are not monotonic, there is some evidence that shorter term residents of Fort McMurray had been unemployed more often than those who had lived in the community for a longer time. People with unstable work histories may be more likely to leave the community.

6.5.2.5 Correlates of employment stability: summary. These results suggest that, overall, those Fort McMurray workers most likely to have a high employment instability record (many jobs and frequent unemployment) are young males who have not gone past high school. In other words, this is the stereotypical transient component of the labour force which growth centres are reported to attract.

The length of time such workers typically stay in Fort McMurray cannot be determined since information on how many of those who came and left within the past year is not available. Nevertheless, some inferences can be drawn from the comparisons presented in Table 30. These young male workers would, most likely, have spent a relatively short time in the labour force. In the 0 to 5 years category of this control variable, it was noted that short term residents of the community had held considerably more full-time jobs and had been unemployed more often than those respondents who had been in Fort McMurray for more than 1 year. Assuming that the pattern of labour force entry and withdrawal for this group has not changed over time, it might be inferred that members of this group typically stay in Fort McMurray for less than a year. In other words, the cohorts which arrived in the community more than a year ago have already lost their more transient members.

6.6 MOVING AND FINDING WORK

All of the respondents (excluding the three who had always lived in Fort McMurray) were asked whether they had been unemployed just prior to moving to this community. One hundred and fifty-nine (37%) answered "yes" to this question. One hundred and sixty-two (38%) reported that they had come to Fort McMurray with a job already arranged. Those who answered this second question with a "no" were then asked if they had found a job right away. Just over one-half (51%) of the 214 respondents who replied to this question said that they had been able to do so.

The responses to this series of questions are difficult to interpret because some respondents, primarily women, may not have been actively seeking employment both before and after the move to Fort McMurray. Because of this problem, the employment circumstances surrounding the move to Fort McMurray are displayed separately in Figure 9 for men and women.

6.6.1 Male Respondents.

Of the men in this sample, 29% reported being unemployed immediately prior to their move to Fort McMurray. About one-half of this group of 58 had a job arranged before they arrived in town. All but five of the 31 who did not have a job arranged managed to find one immediately. Over three-quarters (77%) of the 139 men who were employed prior to moving had a job waiting for them when they arrived in Fort McMurray. About the same proportion of those who did not have a job arranged were able to find one right away (72%).

The only interpretive problem in the "male half" of Figure 9 is that some of the 58 men who reported being unemployed before moving may have simply meant that they were not working at the time. They may, for example, have gone directly from a post-secondary educational institution to a job in Fort McMurray. Ignoring this small interpretive problem, it can be concluded that: (1) men who were employed prior to moving were more likely to have a job waiting for them in Fort McMurray (this group would obviously

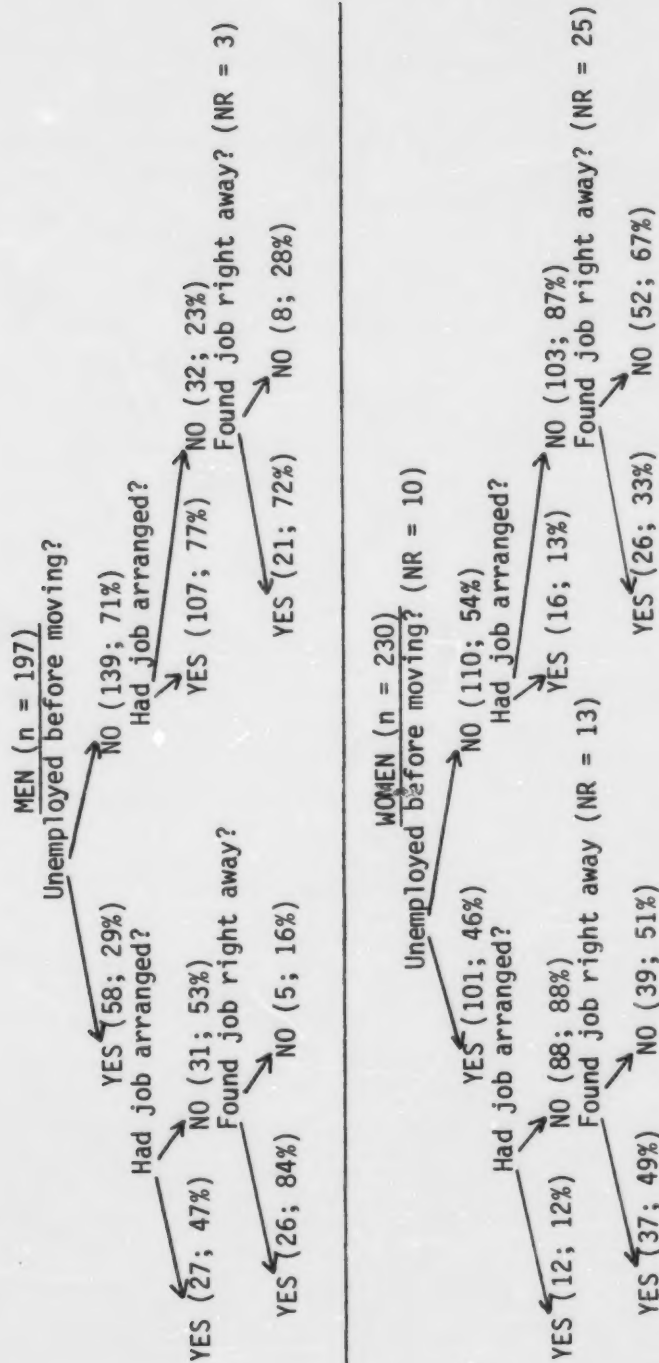


Figure 9. Employment circumstances surrounding the move to Fort McMurray by sex. N = 427 since the three respondents who had always lived in Fort McMurray were not asked these questions.

include the individuals being transferred to this community, as well as those being hired away from other employers); and (2) if a job had not been pre-arranged, most men still had little difficulty in finding employment.

6.6.2 Female Respondents

Almost one-half of the women (46%) answered "yes" to the question about unemployment before moving. Most of these 101 women (88%) did not have a job pre-arranged, and only one-half of those who did not managed to find a job right away. Fifty-four percent of the women in the sample had been in the labour force prior to their move into the community. Again, most of these women (87%) did not have a job waiting for them. However, some may have accompanied their husbands who did have a job arranged. One-third of the women without pre-arranged jobs were able to find employment immediately after they moved to Fort McMurray.

For women the question about unemployment prior to moving must be interpreted cautiously. In spite of this, the conclusion can still be drawn that men are considerably more likely to have moved with a pre-arranged job than are women. The fairly large number of women (38) who could have answered the question about finding a job right away, but did not, suggests that some of the women who were not actively looking for work probably did not respond because they felt the question was not applicable to them. Not surprisingly, the results demonstrate that men generally find work in Fort McMurray more quickly than do women.

6.6.3 Effects of Age, Education, and Years in Fort McMurray.

Attempts to further disaggregate employment circumstances surrounding the move to Fort McMurray (by age, education, and length of residence in the community) result in unreliable estimates because of small cell frequencies. However, one-way analyses of variance for each of the three dependent variables by age, education, and years in Fort McMurray were calculated for men. Only significant results are reported.

As length of residence increases, the probability of being unemployed before moving to Fort McMurray decreases. Forty-two percent of the men who had lived in Fort McMurray for less than a year reported being unemployed before moving. About 29% of those who had been residents of the community for between 1 and 2.5 years and 21% of the long term residents were also unemployed before they came to Fort McMurray. Over one-third (39%) of the men under 30 years of age compared to 23% of the older male respondents answered "yes" to the question about unemployment prior to moving to Fort McMurray. These results (both significant at the 0.05 level) support the earlier conclusion that Fort McMurray attracts young male workers with relatively unstable histories who typically stay in the community for less than 1 year. Since we have no evidence that the employment records of recent migrants have changed, it can be inferred that the cohorts which arrived more than a year ago have apparently lost some of their members with less stable employment histories.

Three-quarters (78%) of the men 30 years of age and older, and 54% of those under 30 came to Fort McMurray with a job already arranged ($p < 0.01$). Four-fifths of the men with post-secondary educations had a job waiting for them, while only 60% of those with 12 or fewer years of education had a job pre-arranged ($p < 0.01$). Because over three-quarters of the men without prearranged jobs managed to find a job immediately, age, education, and years in Fort McMurray are not significantly associated with responses to this third question.

6.6.4 Moving and Finding Work: Summary

In brief, the circumstances surrounding moving to Fort McMurray and taking a new job appear less difficult for men. They were less likely to be unemployed before moving, more likely to have a job arranged when they came and, if they did not, more likely to find a job right away. Among the men interviewed in this survey, younger respondents were more likely to have been unemployed before moving and less likely to have a job waiting for them. The more

educated males in this sample were more likely to have a pre-arranged job in the community. The fact that the most recently arrived males were more likely to have been unemployed before moving to Fort McMurray was interpreted as evidence of high turnover of workers with unstable employment histories.

6.7 OCCUPATIONAL MOBILITY

Since the available work is what attracts most people to Fort McMurray, it is useful to consider whether Fort McMurray workers actually "get ahead" by (1) moving to the community; and (2) staying in the community. In the following section, the monetary answers to these questions will be presented. In this section, the actual jobs which people obtain when they come to the community are examined. Specifically, the questions of interest centre around the socio-economic status of the jobs held by Fort McMurray workers before and after they moved to the community.

The socio-economic index used to measure occupational status in this study was developed by Blishen and McRoberts (1976). They assigned socio-economic scores ranging from a low of approximately 19 (occupations such as hunting and trapping) to a high of around 75 (occupations such as dentistry and law) to 486 different occupations. These scores were based on three components: the average income and education of individuals in these occupations in Canada (from the 1971 census), and the prestige rankings of these occupations (from Pineo and Porter 1967).

6.7.1 Patterns of Occupational Mobility

A simple indicator of occupational mobility can be calculated by subtracting the socio-economic score of an earlier job from that of a respondent's present job. Individuals who have not changed jobs would receive a score of zero, as would those who have exchanged one job for another of equal status.

The 305 currently employed respondents in this sample had moved up an average of 4.83 points over the course of their working career. This average (which includes scores of zero for

40 respondents who were still on their first job) can serve as a baseline against which occupational mobility associated with moving to Fort McMurray and staying in the community can be evaluated. An average upward mobility of about five points in this scale would roughly represent, for example, a move from being a bus driver to becoming a plumber or from being a telephone operator to becoming a telephone repairman.

6.7.1.1 Moving to Fort McMurray. Two hundred and fifty-eight respondents had worked full-time at some time prior to moving to Fort McMurray and also after arriving in the community. This group had only moved up an average of 0.13 points in the Blishen and McRoberts scale in the course of this move.

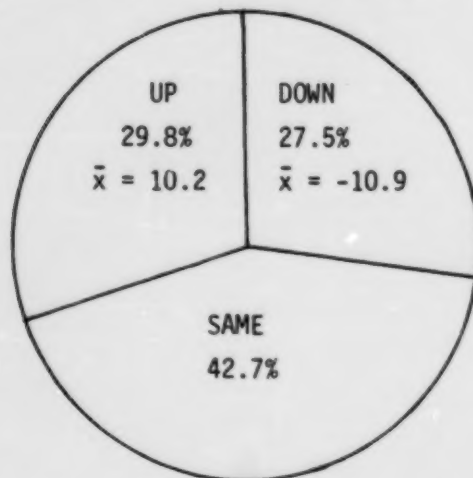
This lack of average mobility actually masks a moderate amount of upward and downward occupational status movement (Figure 10). About 30% of these respondents held higher status jobs after moving. A slightly smaller group had taken lower status jobs in Fort McMurray, and 43% had not experienced any occupational status mobility in their move to the community. These results suggest that there is a high probability of experiencing an occupational status change in the move to Fort McMurray. The amount of mobility for those who moved either up or down is relatively high. At about 10 points, it is twice as large as the average net mobility over the course of this group's total working careers. However, the probability of improving one's status when moving to Fort McMurray is little higher than the probability of moving downward on the status scale.

One form of status improvement is effectively omitted from analysis. Some respondents were unemployed immediately prior to moving (see Figure 9). If they had never been employed, they are not included in this analysis, but if they had worked full-time at some earlier time, their mobility score would be the difference between this last job outside and their first job in Fort McMurray.

Mobility in the move to Fort McMurray (N = 258)

$$\bar{x} = 0.13$$

$$S = 10.52$$



Mobility within Fort McMurray (N = 298)

$$\bar{x} = 1.52$$

$$S = 6.70$$

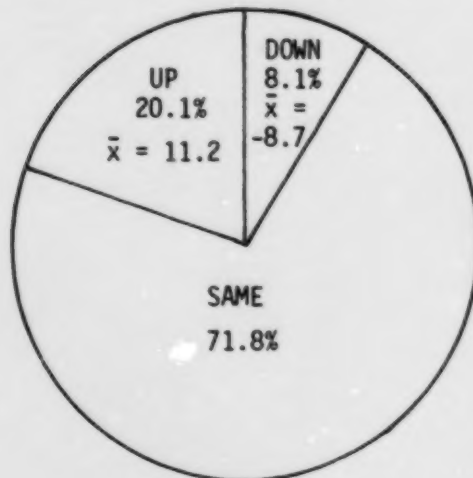


Figure 10. Patterns of occupational mobility. Occupational socio-economic status scores from Blishen and McRoberts (1976).

For this latter group, the move from unemployed to employed status is clearly an upward move.

6.7.1.2 Staying in Fort McMurray. Only 110 of the 305 currently employed respondents had held more than one full-time job within Fort McMurray. The remainder of this group would receive a score of zero on a measure of occupational status mobility within Fort McMurray. For all 305 employed respondents, the average within-Fort McMurray occupational mobility score was 1.52 (Figure 10). Again, very little overall upward mobility can be seen. By inference, this sample of Fort McMurray workers has experienced more overall net upward mobility prior to moving than in moving or in living in Fort McMurray.

This small average increase ($\bar{x} = 1.50$) in Fort McMurray is composed of 72% who had not moved up or down, 20% whose present occupational status is higher than that of their first job in the community, and 8% who had experienced downward mobility during their stay in the community. While less than three out of 10 Fort McMurray workers has experienced any occupational status mobility within the community, the probability of increasing one's status in a job change is higher than the probability of taking a lower status job. Again, those who did change jobs experienced substantial status changes. Those who moved up averaged an 11 point increase in status and those few who moved down lost almost nine points on the average.

6.7.2 Correlates of Occupational Mobility

Occupational mobility can also be assessed by looking at the correlation between status scores of present jobs and earlier jobs in a respondent's work career. A large correlation between the two status measures could indicate an absence of much mobility or similar amounts of mobility for everyone. In other words, the best predictor of respondents' present jobs would be their earlier jobs. A perfect correlation ($r = 1.00$) would be obtained if no status changes had occurred, or if change were identical in amount

and direction for all respondents. A small correlation coefficient would indicate a large amount of mobility, since it would demonstrate that earlier jobs were not necessarily good predictors of present jobs.

An analysis of correlations between occupational status scores invites the inclusion of control variables. The fact that small average mobility scores mask a large amount of both upward and downward mobility has already been noted. By including earlier job status scores and other potentially important variables in a multiple regression analysis, the independent effects of these variables on occupational mobility can be inspected.

6.7.2.1 Moving to Fort McMurray. The correlation between the status of respondents' jobs before and after moving to Fort McMurray is 0.687 ($N = 238$; $p < 0.001$). Forty-seven percent of the variance in these two job status scores is shared. A small part of the remaining unexplained variance can be accounted for by the inclusion of several other variables in a multiple regression equation (Table 31A).

Age, sex, education, total number of full-time jobs ever held, years lived in Fort McMurray, and whether or not the respondent was employed with an oil company were all introduced as potential predictors in a multiple regression analysis. Reduced-form equations are reported here. The occupational status of the job before moving clearly has the strongest effect. Oil company employment and education are the only other two variables with significant independent effects. Controlling on education and the other status variable, oil company employees are found to move about 4.3 points higher on the occupational status scale than do other respondents. Net of the effects of other variables in the equation, an extra year of education is transformed into 0.5 points on the status scale.

Age, sex, and work experience (number of full-time jobs) do not influence occupational status once these variables have been taken into account. Since years in Fort McMurray is not a

Table 31. Multiple regression equations: occupational mobility in moving to and staying in Fort McMurray.

A. Dependent variable: Occupational status of respondent's first job in Fort McMurray					
VARIABLE	B	St. error	Beta	F ^a	r
Job before Fort McMurray	0.607	0.053	0.614	131.09	0.687
Work for an oil company	4.269	1.267	0.156	11.35	0.232
Education (years)	0.524	0.255	0.111	4.23	0.455
Constant	9.607				
	R ² = 0.509		F = 80.83		N = 238

B. Dependent variable: Occupational status of respondent's present job					
First job in Fort McMurray	0.821	0.033	0.818	624.92	0.876
Education (years)	0.565	0.158	0.117	12.79	0.522
Constant	2.397				
	R ² = 0.777		F = 481.46		N = 279

^a All effects are significant at the 0.05 level.

significant predictor in this equation, there is no reason to believe that occupational mobility has been different for cohorts who arrived at different times. However, respondents who had higher status jobs before moving tend to have them after moving. Over and above this expected relationship, more educated respondents are more likely to move upward in status. Furthermore, oil company employment appears to be the route through which (limited) upward mobility can occur.

6.7.2.2 Staying in Fort McMurray. The statuses of respondents' first and present jobs in Fort McMurray are highly correlated ($r = 0.876$; $p < 0.001$; $N = 279$), demonstrating the limited amount of occupational mobility within the community. Seventy-seven percent of the variance in the one measure is shared by the second.

The same set of independent variables used in the regression analysis described in Section 6.7.2.1 was again used with this second dependent variable (Table 31B). Only education adds a significant amount to the variance explained once occupational status of the first job in the community is entered in to the equation. Little occupational mobility has occurred in the community but, despite this, more educated residents are more likely to have experienced some upward mobility in the time they have lived in Fort McMurray. Having lived longer in the community is not, however, an important predictor of occupational mobility.

6.7.3 Occupational Mobility: Summary

The apparent absence of average status mobility surrounding moving to Fort McMurray and staying there "hides" considerable upward and downward mobility. For those who change status, changes are large. Despite the fact that Fort McMurray's work force is rather young (their average age is 31 years), its members have generally experienced more upward mobility prior to moving to Fort McMurray than during and since moving.

The question about "getting ahead" when coming to work in Fort McMurray cannot be answered adequately until incomes and standards of living are analyzed in Section 7. However, in terms of occupational status, workers with higher educations and those who find jobs within the oil companies tend to experience more upward mobility when they come to the community. Finally, the length of time someone has lived in the community is not an important factor in predicting within-community occupational mobility. Nor is there any evidence that groups that arrived in Fort McMurray at different times experienced different job mobility.

6.8 OVERTIME AND SECOND JOBS

6.8.1 Working Overtime

One hundred and sixty-two (53.1%) of the currently employed respondents reported working no overtime in the 2 wk previous to being interviewed. Fifty-four (17.7%) reported 10 or fewer hours in that time period, 28 (9.2%) said they had worked between 11 and 20 h, and 38 (12.4%) reported 21 to 40 h. A further 23 respondents (7.5%) answered that they had worked over 40 h of overtime in the past 2 wk (this group includes two respondents who did not answer in whole numbers, but simply answered "a lot"). This distribution reflects a community where overtime is almost a norm, since close to one half of the sample of currently employed reported at least some overtime.

Men reported an average of 14.5 h of overtime in the two week period, compared to 4.5 h for women. This statistically significant ($p < 0.01$) difference might be explained by suggesting that a higher proportion of men are employed by the oil companies, and that these employers provide more opportunities to work overtime. However, this is not a sufficient explanation. Although employees of the oil companies do tend to work more overtime, the difference is not statistically significant ($p > 0.05$). Other employers (probably in the construction industry which

employs a high proportion of men) must also be allowing (or requiring) workers to put in a substantial amount of overtime.

Further analysis of the "hours overtime worked" variable reveals no significant differences between groups when marital status, years lived in Fort McMurray, age, education, and household size are used as independent variables. A simple summary of this analysis is that Fort McMurray is a town where working overtime is a commonplace occurrence, especially among men. However, only 24% of the total sample agreed with the statement "Overtime really interferes with our lives". For the remainder of the respondents, it would appear that the financial advantages of overtime are considered to be more important than the social disadvantages.

6.8.2 "Moonlighting"

While overtime is commonplace in Fort McMurray, working at a second job is not. Two hundred and eighty-five (93%) of the currently employed interviewees did not report any paid work outside their main job, and only six respondents admitted more than 10 h of "moonlighting" in the previous 2 wk. These results may be biased downwards because of respondents' reluctance to admit to working at a second job, although none of the interviewers reported encountering problems when asking this question. A better explanation is the high amount of overtime worked. It is difficult to work a lot of overtime and hold a second job. Typically, a worker can make more money on overtime than on a second job.

6.9 LOOKING FOR WORK

All of the survey respondents were asked whether they had, in the previous 12 mo, looked for full-time or part-time work both within and outside of Fort McMurray. Over one-quarter (29%) of the total sample reported having looked for work in Fort McMurray while 14% had looked for full-time work outside of the community (Table 32). Only 12% and 3% had looked for part-time work within and outside of Fort McMurray, respectively, in the past year.

Table 32. Looking for full-time work by time in Fort McMurray and time on present job.

	In Fort McMurray ^a (%)	Outside Fort McMurray (%)	N
Years lived in Fort McMurray:			
≤ 1	54.2	26.9	120
1 - 2.5	22.0	10.9	127
2.5 - 4	20.3	12.3	64
4+	14.9	3.0	101
Total sample:	28.8	13.7	424
Years at present job:			
≤ 0.5	60.2	25.0	108
0.5 - 1	33.9	12.5	56
1 - 2.5	5.4	15.1	74
2.5+	6.2	7.7	65
Total currently employed:	30.4	16.6	303

^a The time frame for both "inside Fort McMurray" and "outside Fort McMurray" was "within the past year."

Residents of more than 1 year in Fort McMurray could be expected to have looked for full-time work less than those who had moved to the community within the past year. This hypothesis is supported by the results presented in Table 32. Of the short term residents, 54% had looked for full-time work in Fort McMurray and 27% had looked outside of the community. The percentages drop substantially for longer term residents.

While the overall results for the currently employed do not differ appreciably from those for the total sample, there are important differences within the currently employed sub-sample. Because of the time-frame of the question ("within the past twelve months"), we would expect that respondents who had held their present jobs for less than 1 year would be more likely to report job-hunting in the past year within Fort McMurray. This hypothesis is clearly supported by the data breakdowns displayed in Table 32. Sixty percent of those who had been on the job for 0.5 years or less, 34% of those who had held their job from 6 to 12 mo, and less than 10% of the rest of the currently employed respondents reported looking for work within Fort McMurray within the past year. However, of those currently employed workers who had held their jobs for a year or more, a larger proportion had looked for full-time work outside of Fort McMurray than had been job-hunting within this community.

For a town that is growing as fast and attracting as many new workers as is Fort McMurray, it is not surprising to find almost one-third of the adult population having looked for full-time work in the community within the past year. This job-hunting is concentrated among the more recent arrivals who have held their current jobs for a shorter time. The one exception to this pattern is the somewhat higher percentage (15%) of those who have held their jobs between 1 and 2.5 years. They report having looked outside of Fort McMurray for a full-time job. Members of this employment cohort, if they are on the job market, appear to be more inclined to look for new jobs outside of the community than within it.

Dissatisfaction with the community and the jobs available in it may appear more frequently after people have worked in Fort McMurray for some time. The lower percentage of the long term workers (over 2.5 years) who report having looked outside of the town (7.7%) may mean that this cohort has already lost its more dissatisfied members.

6.10 SUMMARY

Prior to the building of its two oil sands processing plants, Fort McMurray's economy was based on the transportation and communications industrial sector. Fort McMurray remains a single industry town but today its industrial base is the mining and oil sector. Both male and female labour force participation rates increased as the absolute size of the labour force grew dramatically. The proportion of the labour force composed of construction jobs rose and fell with construction booms around the building of each plant. Professional and technical jobs have increased in relative importance as the oil processing plants have become operational.

There is some evidence that a moderate number of workers with relatively unstable employment histories may be attracted to Fort McMurray. This group is most likely to be composed of young males without post-secondary educations. There is also inferential evidence that such individuals typically do not remain long in the community.

Men were less likely than women to be unemployed prior to moving to Fort McMurray and more likely to have a job arranged when they came. If not, they were more likely to have found one immediately. A considerable amount of individual upward or downward occupational status mobility has been associated with the move to Fort McMurray, even though the average amount of mobility is small. In terms of occupational status, better educated workers and those employed by oil companies are more likely to have experienced upward mobility.

Working overtime is a commonplace activity for Fort McMurray but holding a second job is not. The latter is probably a consequence of the former. A moderate number of the employed respondents in this sample had looked for full-time work in the previous year, suggesting that some groups may be relatively dissatisfied with their jobs.

7. INCOMES AND STANDARD OF LIVING

7.1 FORT McMURRAY INCOMES IN 1978

By reputation, Fort McMurray is a place to make money. The main reason that people go to Fort McMurray is for the jobs that they can get and the money they can make (Matthiasson 1971). That, however, does not make it particularly different from other places in Alberta (McVey and Ironside 1978) or, indeed, anywhere else in Canada (Lucas 1971; Riffel 1975; Larson 1979). What is different about Fort McMurray is that residents do have higher than average incomes. They do not appear to be more highly qualified or more highly educated than other populations. Rather, migrants' incomes appear to have increased when they moved to Fort McMurray.

The average individual 1978 income for the 359 respondents (83.5% of the total sample) who answered the income questions was \$14 919 (Table 33). Forty percent of this sample of Fort McMurray residents had 1978 incomes of \$7700 or less, while the top 20% reported incomes ranging from \$27 241 to \$80 000.

A comparison with average 1978 individual incomes in Edmonton was made using the 20 response category codes in the 1979 EAS. Using the mid-points of the category ranges and assigning a value of \$50 000 to the highest category (\$35 000 and above), an average of \$11 942 was calculated. The Fort McMurray average 1978 individual income of \$14 919 is clearly considerably higher.

The large proportion of individual Fort McMurray residents in low income brackets is a function of the inclusion of individuals, primarily women, who were not in the labour force for all of 1978. Only 204 (47%) of the original sample were employed for all of 1978, and a substantial number of these cases involved employment in a place other than Fort McMurray. The combination of non-participation in the labour force, the recent arrival of many residents, and the reluctance of some people to complete income questions yields a small sample size for those who had been employed in Fort McMurray for 1978. Where applicable, the analysis therefore focuses

Table 33. Income means and quintile limits: Fort McMurray (1978), Alberta (1977), and Canada (1977).

	Fort McMurray (1978)		Alberta (1977) ^a	Canada (1977) ^a
	Individual Income (N = 359)	Total Household Income (N = 349)	Total income (all house- hold units; i.e., families and unattached individuals)	
Mean ($\bar{x}$)	\$14 919	\$24 695	\$17 550	\$16 764
Upper limits of:				
1st quintile	\$ 1 000	\$10 600	-----	\$ 5 973
2nd quintile	\$ 7 700	\$21 312	-----	\$12 013
3rd quintile	\$17 400	\$29 360	-----	\$17 993
4th quintile	\$27 200	\$36 860	-----	\$25 594
5th quintile	\$80 000	\$82 238	-----	-----

^a Source: Statistics Canada (1979:77, 79, 137).

on total household income. The problem of income earned outside of Fort McMurray is analyzed by examining household income differences across migration cohorts. Presumably, most of those who were not employed in 1978 had spouses whose incomes would be included in the calculation of total household income. The use of household incomes presumably corrects the downward bias in individual incomes that results from lack of employment.

Respondents were asked how much they, their spouse (if applicable), and other household members (if applicable) had received in 1978 from: wages, salaries, etc. (before deductions); self-employment (net); government transfer payments; and all other sources. Average 1978 total household incomes was \$24 695 for the sample of Fort McMurray residents who responded to all parts of this income question (N = 349).

Comparable data for Alberta and Canada were not yet available at the time of writing. However, even if the 1977 Statistics Canada equivalent of our total household income is increased by a 10% inflation factor, the Alberta average and the Canadian average are well below the Fort McMurray average (Table 33). Referring once again to the 1979 EAS, the average 1978 total household income (recoded from categorical responses) was \$20 915. Despite the difficulties involved in obtaining comparison data, it is still safe to conclude that total household incomes are higher in Fort McMurray than they are in the rest of Canada, the rest of Alberta, and probably the rest of urban Alberta. These survey results reinforce Fort McMurray's reputation as a place to make money.

The lowest 20% of the Fort McMurray sample had 1978 household incomes below \$10 600, while the top 20% reported incomes in excess of \$36 861 (Table 33). The best comparison data available are those referring to Canada, as a whole, in 1977. Once again, even when these 1977 quintile upper limits are inflated by 10%, the differences between income distributions in Fort McMurray and in all of Canada are very apparent. The upper limits for each of the

population quintiles are considerably higher in Fort McMurray than in the rest of the country. This demonstrates that the higher average incomes in this community are not simply statistical oddities produced by a few respondents with extremely high incomes.

If the 1977 Alberta average total household income (\$17 550) is increased by 10%, as suggested above, an estimated 1978 provincial average of \$19 305 is obtained. Fort McMurray's 1978 average (from 1979 survey estimates) of \$24 695 is 128% of this amount. Going back to 1970, average total household income in Alberta was \$9 024 while in Fort McMurray it was \$11 407 (Nichols and Associates 1979:124). Fort McMurray's average, at that time, was 126% of the provincial average. It appears that the degree to which Fort McMurray household incomes are higher than provincial averages is about the same at the end of the decade (when Syncrude has come on track) as at the beginning of the 1970's (when Suncor was the only major oil sands development). Some fluctuations in this pattern, caused by construction booms, were noticeable during the decade. Nevertheless, from 1968 to 1976, income levels in Fort McMurray were generally about 15 to 25% higher than the provincial average. During this same period, incomes in the remainder of the AOSERP study area were about 70 to 90% of the provincial average (Nichols and Associates 1971:119-123). Thus, relative to the province and the country, Fort McMurray incomes have been and remain high.

While average incomes within this community are higher than the provincial and national averages, there are some notable differences within the community as well. Some groups in Fort McMurray made significantly more money in 1978 than did other groups. The questions therefore are: (1) who makes high incomes, and are there any groups that appear to have low incomes?; and (2) what are people doing with their money? This latter question will be examined in terms of consumption and debt. The former question is addressed by examining demographic and social differences in incomes within the population.

7.2 INCOME DIFFERENCES WITHIN FORT McMURRAY

7.2.1 Problems in the Analysis of Income Differences

It has been argued above that household income is the more appropriate indicator in the analysis of income differences because over one-half of the women are not employed, and many respondents earned their 1978 incomes elsewhere. Men reported higher individual incomes ($\bar{x}$ = \$24 231) than women ($\bar{x}$ = \$5863). Some of this large difference ($p < 0.001$) is a function of the inclusion of unemployed women in the calculations. If only currently employed respondents are included in the analysis (on the assumption that they were probably employed during 1978 as well), the male average remains relatively unchanged, while the average for females increases to \$8948. The large, significant difference ($p < 0.001$) between the incomes of men and women remains.

Nichols and Associates (1971:130) report that average incomes of women employed by Syncrude are about two-thirds of the average incomes of male Syncrude employees. The same difference by sex is apparent in incomes for provincial government employees. The explanation for sex differences in income is not simply that women are paid less for the same work. Instead, as noted earlier, women in Fort McMurray, like women elsewhere, are most likely to be working in lower status and lower salaried occupations (for example, sales, services, and clerical jobs).

Turning to household incomes, the effects of length of residence in Fort McMurray are significant ($p < 0.001$) and clearly substantial (Figure 11). Average household incomes increase from \$15 400 to \$28 000 through the first two cohorts (for those who came since June, 1978, one year before the survey). Income levels remain high for the three cohorts who came between June 1978 and the beginning of 1975 (averaging \$28 000 to \$29 400). Average incomes for those who had lived in Fort McMurray 4.5 to 7 years were somewhat lower ($\bar{x}$ = \$25 800) and incomes for those who had lived in the community 7 years or more were even lower ($\bar{x}$ = \$23 800).

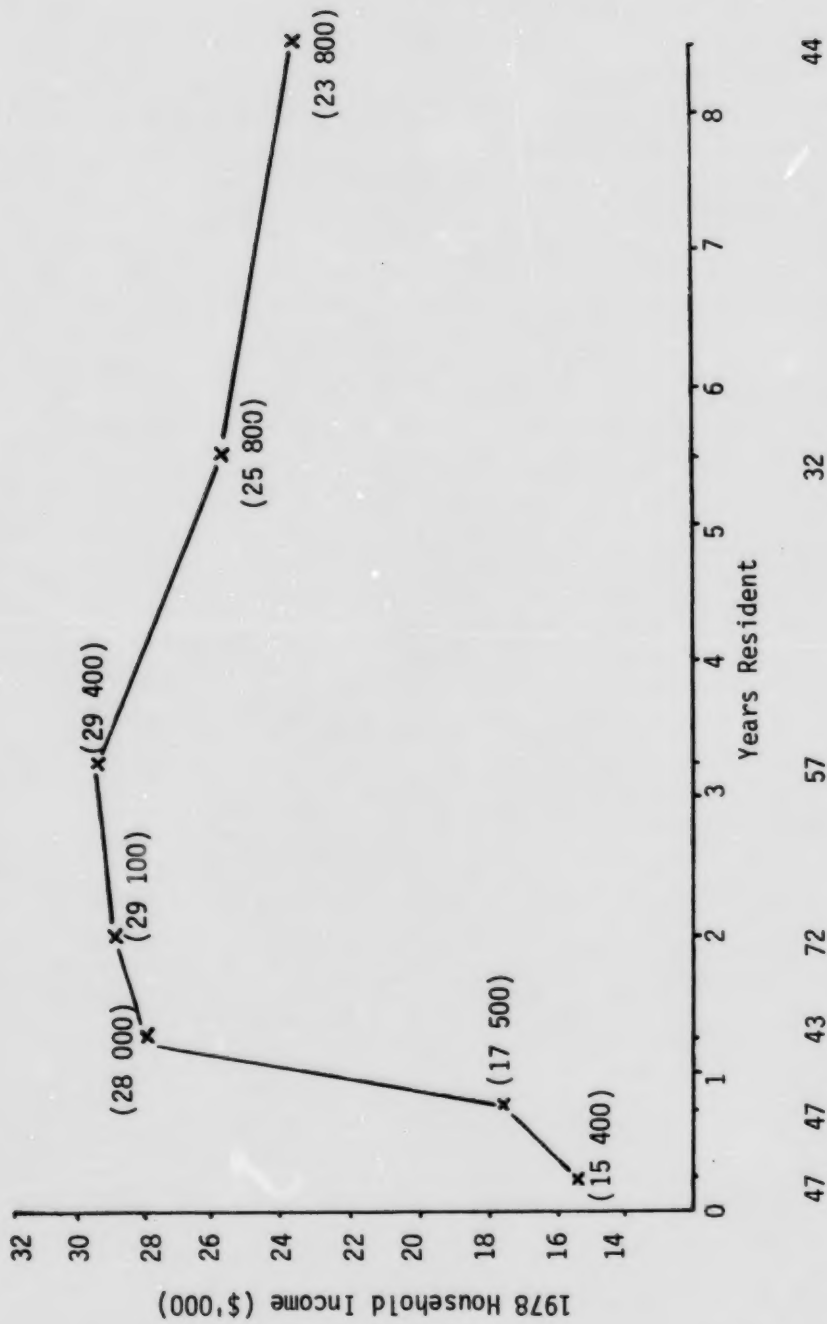


Figure 11. Average household income by migration cohort. Averages for each cohort are given to the nearest \$100. Sub-sample sizes for the cohort intervals (0 - 0.5, 0.5 - 1.0, 1.0 - 1.5, 1.5 - 2.5, 2.5 - 4.0, 4.0 - 7.0, 7.0 and over) are provided below the horizontal axis.

The low incomes for short-term residents are probably an indication of lower incomes earned before respondents moved to Fort McMurray. Those who were in the first cohort (0 to 0.5 years) would be reporting incomes ($\bar{x}$ = \$15 400) all of which were earned elsewhere. Those in the second cohort (0.5 to 1.0 years) would have earned as much as 6 mo income somewhere else ($\bar{x}$ = \$17 500), and those in the third cohort (1.0 to 1.5 years) could have earned all their income ($\bar{x}$ = \$28 000) in Fort McMurray. Those in the fourth cohort had been in Fort McMurray at least 1.5 years. This meant that all their 1978 income ($\bar{x}$ = \$29 100) was earned while they were residents of the community. It is possible that those who earned lower incomes were more likely to leave sooner, and this perhaps contributed to the observed differences. It is also clear that those who had lived longer in Fort McMurray were reporting income earned in that community. As already noted, Fort McMurray incomes are considerably higher than those received elsewhere in the province or the country.

Income levels drop noticeably for residents who had lived in Fort McMurray longer than 4.5 years. These people were living in Fort McMurray at the beginning of the latest development boom, or before it started (June 1975 or before). They have lower incomes despite their greater experience in the labour force. So few are over age 65 (three in the whole sample of 430) that this is not a factor. There is, however, a general tendency for incomes to be somewhat lower for older respondents even prior to retirement (Poduluk 1968). Older respondents may have lower levels of education and may have had more difficulty keeping up with inflation than more recent entrants to the labour force. Whatever the cause, longer term residents have not benefited as much from the boom as have other current residents.

7.2.2 Socio-demographic Factors and Household Income

Further investigation of income differences shows that average household incomes for 1978 did not vary significantly ($p > 0.05$) by household size (Figure 12). This implies that household income per household member decreases as the size of the household increases. Marital status differences were much larger ($p < 0.01$). Single respondents earned an average of about \$16 900 for the household, largely because there was less likely to be the opportunity for there to be two income earners in such a situation.

The pattern of income differences by age is roughly the same as the pattern for length of residence in Fort McMurray, and these differences are also significant ($p < 0.001$). Through to the 35 to 44 year old cohort, older respondents reported higher incomes. Those over the age of 44 averaged lower household incomes than did any of the cohorts except the under 25 age group. A number of factors are probably at work. The very young are least likely to have obtained more than a high school education and are, therefore, less likely to have higher paying jobs. This is demonstrated in results for income differences by education (Figure 12). Those with 12 years or more (senior matriculation, or junior matriculation and diploma or certificate training) earned significantly more than those with 11 years of education or less. Indeed, the same explanation may partially account for the drop in income for those over the age of 44. Since education levels have increased generally over time, those who completed their education some time ago generally have lower attainment levels.

The distribution of household income by age for the Canadian population has a similar curvilinear pattern (Statistics Canada 1979: 84-86). However, the threshold appears to be at a later age, since the 45 to 54 year old cohort has the highest household income. The largest drop occurs for the 65 to 69 age group (with retirement), but in our sample of 430 respondents there were only three who are 65 or over. Generally speaking, however, older respondents (or their spouse, if they themselves are not in the labour force), have probably been in the labour force a longer

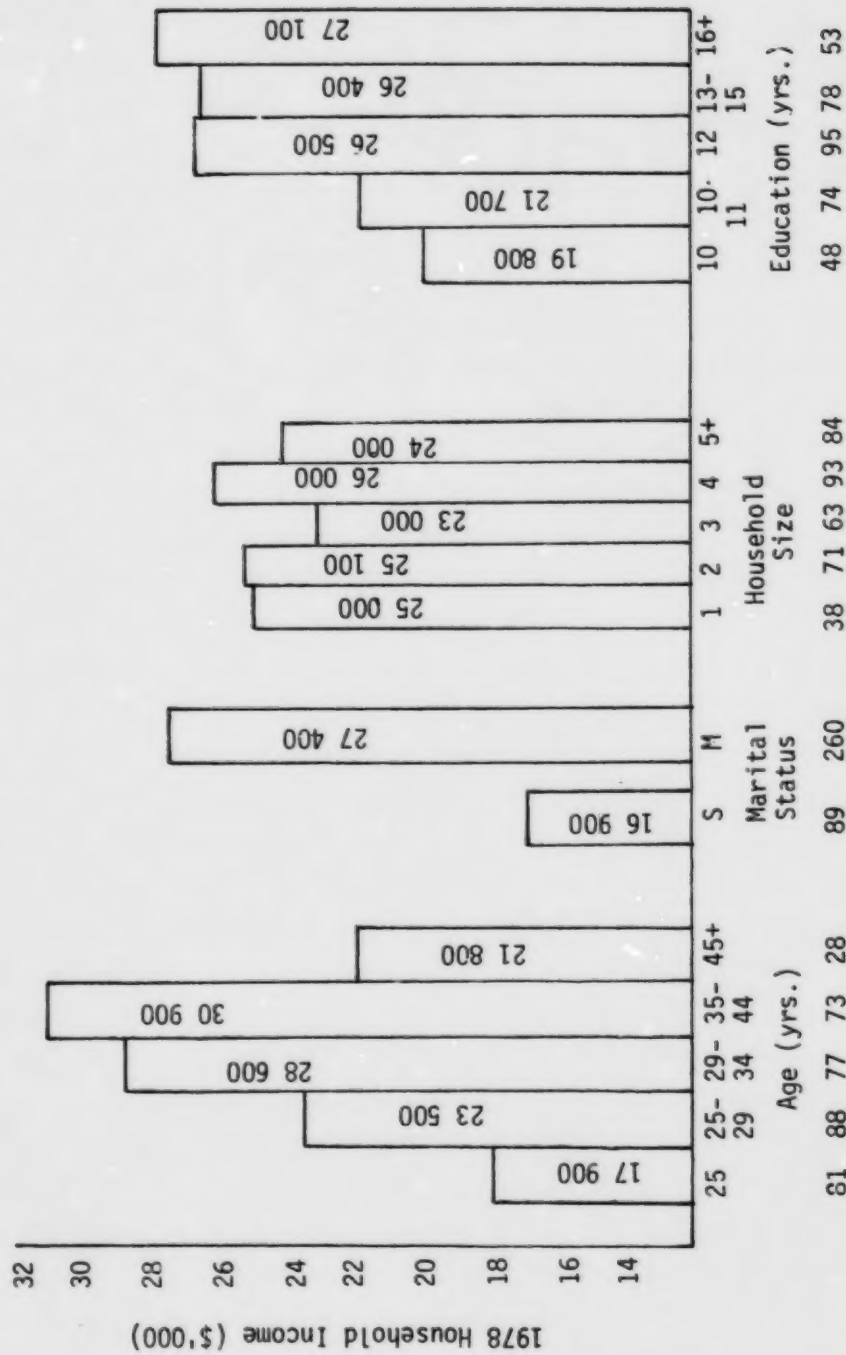


Figure 12. Average household income by age, marital status, household size, and education. Sub-sample sizes appear below the horizontal axis.

time and have held their present job for longer. Consequently, the various benefits of seniority (including higher income) increase as age increases. In this sense, age can be used as a surrogate indicator for labour force experience, particularly if the effects of education are simultaneously controlled.

There is at least one other important income difference associated with the social impact of oil sands development. Those who work for the major oil companies have higher household incomes. For example, in households where someone works for Suncor or Syncrude, total household income is significantly higher ($\bar{x}$ = \$29 321) than it is in households where no one is employed by an oil company ($\bar{x}$ = \$21 634).

7.2.3 Multivariate Analysis

Older respondents have lived in the community longer and have lower educations. Among the employed, women have lower individual incomes and are also less likely to be employed by the oil companies than are men. Also, women typically have lower educational attainment. The difficulty in simply using all these predictors in a multiple regression analysis is that most refer exclusively to individuals. Sex is an obvious example, as are education and age. On the other hand, marital status, household size, and length of residence in Fort McMurray would prove less problematic as household properties. Since they apply to individuals as well, the following multivariate analysis uses respondents' individual 1978 incomes.

In order to interpret results for individuals with varying amounts of employment in 1978, the number of months worked in 1978 was included as a control variable. To control for the problems involved in interpreting income differences that included income earned in places other than Fort McMurray, length of residence in Fort McMurray was also included in the variable list as a possible predictor. Union membership, sex (male = 1), and employment with Syncrude or Suncor were also included as dummy variables. The

length of time (in years) that respondents had held their current job was included as a measure of recent job-specific experience, and age was included as a surrogate for general job experience. Along with education, all these variables were expected to have a positive impact on income.

When respondents' 1978 income was regressed on education, a small, statistically significant ($F = 4.9$, $p < 0.05$) slope was found. For every additional year of education, respondents predicted income increased \$592 (standard error = \$267, constant = \$8074). The correlation between income and education was small ($r = 0.122$, Table 34A). In a community in which individual incomes averaged about \$15 000, the monetary rewards of higher education seemed rather small. When the effects of education were adjusted for differences in months employed, sex, experience in the present job, and age, the partial regression coefficient for education was \$304 and this was not significantly different from zero (Table 34B). In this sense, education does not have a significant independent effect on income, when other factors were controlled.

Employment with an oil company has a moderate zero-order correlation with income ($r = 0.408$), indicating that oil company employees have higher 1978 incomes. This employment was also correlated with months employed in 1978 ($r = 0.409$) and with sex of respondent ($r = 0.453$; i.e., males more likely to be employed by the oil companies). When these two factors (months employed and sex) are taken into account, oil company employment does not have significant effects on income. Union membership has small, significant ($p < 0.05$) positive effects on income, but these too appeared to be accounted for by other variables in the equation (Table 34).

Each month more that the respondent worked in 1978 resulted in an income of about \$1100. Men, on the average, still made about \$11 000 more than women when income was adjusted for months employed. Each year of experience on the job that the respondent currently held added about \$600. and each year of age added roughly another \$130. All these effects are, of course, net of the effects of other variables in the equation.

Table 34. Multiple regression equations: respondents' 1978 income with selected independent variables.

VARIABLE	B	St. error	Beta	F	r
A. Education	591.9	266.9	0.122	4.92	0.122
Constant	8074.2				
B. Months worked in last year	1120.0	136.2	0.389	67.61	0.650
Sex (male = 1)	11117.3	1300.6	0.402	73.06	0.650
Years at present job	589.7	258.8	0.091	5.19	0.190
Age	131.1	60.0	0.086	4.77	0.147
Education	304.4	182.5	0.063	2.78 ^a	0.122
Constant	-8477.9				
	$R^2 = 0.552$			N = 327	

^a Effect is non-significant ($p > 0.05$). All other effects are significant at the 0.05 level.

Together, these five variables account for 55% of the variation in individual incomes within Fort McMurray.

7.2.4 Low Income Groups

From the analysis above, it is clear that females, relative newcomers, those with lower educations, young adults and those over 44, and those who work in the secondary labour market (not for the oil companies) are at some disadvantage in terms of income. Given the limitations of sample size for those who reported income, all of these characteristics cannot be examined simultaneously. However, some of the more notable differences in income can be pursued.

Fort McMurray reputedly attracts unskilled migrants from the maritime region of Canada. Lacking the skills which the specialized Fort McMurray labour market demands, so the argument goes, they are forced to take whatever jobs they can get. These survey results do show a difference in household incomes by province of origin. While the incomes of the 25 respondents from Newfoundland and the 16 from Quebec do not differ much from the overall average, the 17 respondents from Nova Scotia or New Brunswick had considerably lower average incomes ($\bar{x} = \$17\,700$). They did not differ from the rest of the sample ($p > 0.05$) in terms of education, employment with an oil company, time on the present job, or proportion of females. They were, however, significantly ($p < 0.05$) younger, less likely to be married, had lived in Fort McMurray a shorter time, and were employed at lower status jobs.

Even here, the relatively low incomes appear to be a consequence of life cycle factors and length of residence in Fort McMurray. Presumably, incomes will increase as such respondents progress through the life cycle, and when a higher proportion of them have been in the community longer. In short, it is difficult to find solid evidence that migrants from maritime Canada are not doing as well financially as other Fort McMurray residents.

The 10 "single parents" who reported their incomes had an average total household income of \$18 300 for 1978. This was not significantly different ($p > 0.10$) from the rest of the sample, and the difference was even smaller between single parents and single wage earning families. Given the small sub-sample size, it is difficult to draw firm conclusions. However, it appears that these particular single parents have managed to adapt to life in Fort McMurray. This group had lived in the community an average of 6.0 years, compared to 3.1 years for all other respondents. Perhaps single parents with inadequate financial resources are more likely to leave the community, leaving behind those who are somewhat more financially secure.

Native Indians are another group with lower than average 1978 household incomes. For the 11 (out of 16) in the sample who reported their incomes, the average was \$15 800. The difference between these 11 Indians and the rest of the sample ($\bar{x} = \$25\ 000$) was statistically significant ($p < 0.05$). They did not differ from the rest of the sample on demographic factors (sex, age, marital status, years resident in Fort McMurray) or on employment with the oil companies. They did, however, have significantly lower ($p < 0.05$) levels of educational attainment (9.5 years versus 12.3 years), and only one-half of the respondents themselves were currently employed (versus 72% of the remainder of the sample). They had been employed an average of 5.4 months in 1978 compared to 7.7 months for the other respondents ($p < 0.08$). Again, the extremely small sub-sample size makes conclusions tentative. It appears that lower educations and lower employment rates are part of the problem, but further more detailed analysis of larger samples would be necessary to elaborate this rather "conventional" conclusion.

7.3 FRINGE BENEFITS

Part of the total compensation received by employees includes a wide range of fringe benefits, particularly the housing subsidies discussed in Section 4. It is difficult to put a dollar

value on many of these benefits so as to calculate "real" differences in total income. For that reason they are analyzed separately here.

All of the currently employed respondents were asked to identify the fringe benefits which they received. The items on the list provided to the respondents break into two distinct groups when they are ranked by the percentage of the sampled labour force receiving them (Table 35). Pension plans, life insurance, medical and dental plans, training programs, and transportation of some kind are fringe benefits received by over one-half of the workers in the sample. Transportation as a fringe benefit includes bus service to the oil sands processing plants and, hence, is found higher on the list than normally would be expected. The remaining six fringe benefits on the list are received by 25% to 40% of the currently employed respondents.

The currently employed sample members are separated into three groups in Table 35: oil company employees ($n = 126$), public sector (government and schools) employees ($n = 49$), and others ($n = 128$). In almost all cases, oil company employees are more likely to receive a benefit than are public sector employees. They in turn are more likely to be beneficiaries than are members of the residual category. The monetary advantages of oil company employment described earlier appear to be enhanced by the fringe benefits provided.

A fringe benefit scale, constructed by simply adding the number of benefits a respondent reported receiving, was used to compare the benefits reported by Syncrude and Suncor employees. The overall average score on this (12 point maximum) scale was 5.76. Oil company employees received an average score of 8.23, demonstrating their already-discussed advantage in this respect. Within the oil company sub-group, unionized workers received an average of 8.2 fringe benefits while non-unionized workers were getting an average of 8.3 benefits. Non-unionized Syncrude is, as most

Table 35. Fringe benefits by employer.^a

Benefit	Employer			
	All employees (n = 305)	Oil company employees (n = 126)	Public sector employees (n = 49)	Other employees (n = 128)
	Percent receiving benefit			
Pension plan	65	85	89	45
Life insurance	62	86	76	39
Supplementary medical	55	80	71	33
Dental plan	55	86	43	35
Training program	55	78	47	41
Transportation	52	94	13	28
Meals	40	62	20	30
Utilities subsidy	39	82	11	8
Cost of living/ northern allowance	33	37	66	20
Free/discounted merchandise	32	35	2	40
Recreation facilities	27	38	32	16
Stock options/ profit sharing	27	48	2	18

^a All differences by employer are statistically significant ($p < 0.05$).

Fort McMurray workers know, matching unionized Suncor's benefit package rather closely. In this respect, unionized oil sands employees appeared to have no advantage over their non-unionized counterparts.

The distribution by employer of cost of living/northern allowances differs from that of the other fringe benefits in Table 35. About 66% of public sector employees report receiving this benefit compared to 37% of the oil company employees, and 20% of the remainder of the currently employed. Public sector employees, unlike the workers in the oil sands processing plants, have occupational peers in the rest of the province. They can, consequently, collectively argue that working in Fort McMurray requires a financial compensation which their southern peers do not need. Nichols and Associates (1979:127) estimate that northern cost-of-living allowances and isolation bonuses for provincial, municipal, and school board employees "probably are equivalent to about 7% to 15% premiums over base salaries".

Length of time lived in the community did not significantly differentiate the distribution of any of the 12 fringe benefits used in this analysis. Neither old-timers or newcomers had any particular advantage. Put another way, there is no evidence that those who receive the most benefits stay longer. However, the length of time the respondent had held his or her job was significantly associated with the distribution of over one half of these benefits. Employees with greater seniority were more likely than recently hired workers to receive each of the first eight benefits listed in Table 35. Also, jobs with better benefits may have lower turnover. Because men are more likely to be employed by the oil companies and more likely to have been at their present job for a longer time, they are also significantly more likely to receive each of these eight benefits than are women. The same applies to the transportation to work benefit.

It was noted earlier in this section that education does not translate into a great deal of extra income for workers in Fort McMurray. The same applies to the effect of education on fringe

benefits. More educated respondents were no more likely than those less educated to receive any of these twelve fringe benefits. On the other hand, respondents who reported higher 1978 personal incomes were significantly more likely to receive all but two of these fringe benefits. The exceptions to this pattern were free or discounted merchandise (probably available to those working in retail trade) and recreation facilities. In brief, oil company employees (generally men) receive higher incomes and more fringe benefits. Education does not make a large difference to this pattern of monetary and other rewards for working in Fort McMurray.

7.4 STANDARDS OF LIVING

7.4.1 Introduction

Fort McMurray is, by reputation, also a place where people spend a lot of money. Van Dyke and Loberg (1979:27-9) write of "conspicuous consumption" and conclude that "the relative affluence ... paradoxically results in individuals going deeper in debt". A large part of the "extra" spending is for expensive housing, high taxes, and prices of goods and services that generally run about 13% higher than Edmonton (Nichols and Associates 1979:131). Again, none of this represents a situation unique to Fort McMurray (Lucas 1971; Riffel 1976; Himelfarb 1976; Larson 1979).

Having looked at who makes the money, and how they make it, the next question is: "what do they do with it?". How do Fort McMurray residents spend or invest their incomes, and what patterns of debt have developed? While level of living is not a measure of adjustment, it may certainly be one of its important correlates. It obviously has a great deal to do with the quality of life (Campbell et al. 1976).

7.4.2 Estimates of Standards of Living

Estimates of standard of living usually include a wide range of consumption items, beginning with housing and property. These were discussed in Section 5. Here, three indices are

calculated from responses to check-lists of items: a vehicles index as the sum of all vehicles (including recreational) owned by household members; a household possessions index that is the sum of a 13 item list including dishwashers, freezers, and sports equipment; and a third index focusing on seven investment items (stocks, bonds, real estate, and so on).

The 427 respondents who answered all the items concerning vehicles did not appear to own a particularly large number of cars. They did own a wide variety of recreational and other vehicles. Households averaged slightly less than one car per household ($\bar{x} = 0.99$), and owned an average of 0.48 other vehicles such as vans, campers, jeeps, and trucks. If motorcycles are included this gives a total of about 278 other motor vehicles (besides cars) among the 427 households. In addition there were 98 boats and 84 snowmobiles.

The image of conspicuous consumption and wide spread purchase of expensive modern conveniences is not generally confirmed in our survey. Few of the households surveyed owned microwave ovens, gas barbecues, food processors, or garberators (Figure 13). One-third had automatic dishwashers, and about one-half had a freezer. Three-quarters had automatic washers and dryers and 86% had stereos. Of the four sports items included in the list, guns were the most prevalent (50%), followed by skis (28%), golf clubs (20%), and pool tables (4%).

There also appears to be a good deal more saving and investment activity than one might expect. The totals for "other property" (Figure 13) could be somewhat exaggerated if respondents misunderstood the item and included their homes. However, this is not a problem with a second home or cottage, and 10% owned one or more of these. In addition, over one-quarter of the sample owned each of stocks, bonds, and RRSP's. This would appear to indicate relatively widespread investment.

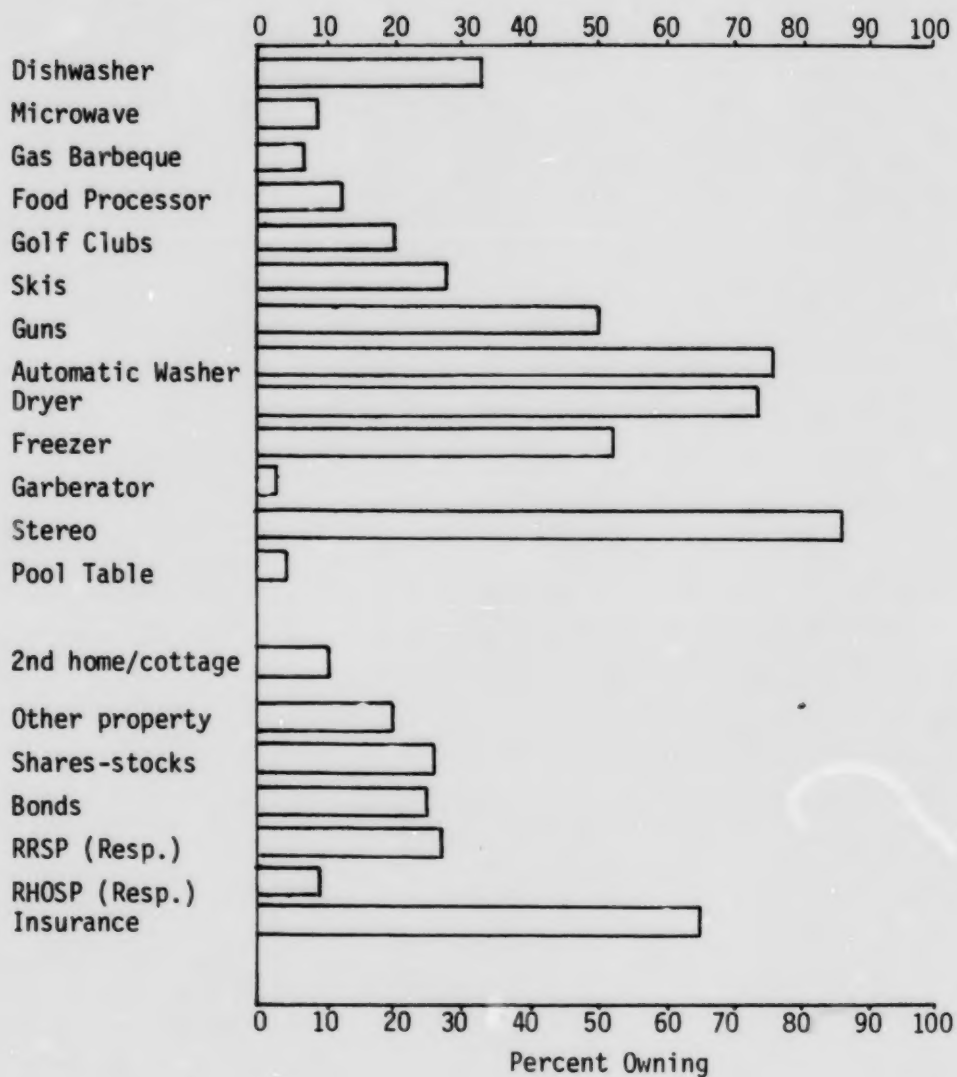


Figure 13. Household possessions and investments. N = 430 for possessions; N = 398 for investments.

Results for both the household possessions and the investment items are interesting in view of the relatively young age of the sample, and the recency of their moves to Fort McMurray. In order to examine these and other differences within the population, and to simplify data presentation, the three indices were summed into one general level of living index.

7.4.3 Difference in Standard of Living Within Fort McMurray

As would be expected, total household income has a positive effect (significant at the 0.001 level) on level of living (Table 36). There is only one exception to the monotonic increase in level of living scores as income increases. It occurs for the households which earned between \$4000 and \$19 000 in 1978. They had lower average level of living scores (6.89) than did those with incomes below \$5000. Residents with these below average incomes are often those who are young, single, and have moved to Fort McMurray relatively recently. They may not have brought much with them, and may not have had time (or earned the income) to purchase the kinds of items on the scale. The problems of low income and low standards of living warrant further investigation. However, as noted in the discussion of income differences, small sub-sample sizes make such detailed investigation difficult within the present survey.

As implied above, older residents would be expected to have accumulated more possessions. Age and level of living are significantly ($p < 0.001$) and positively related (Table 36). As was the case with income, those in the 35 to 44 age cohort have accumulated more of the possessions commonly associated with a North American middle or upper-middle class lifestyle ($\bar{x} = 11.0$). The oldest group (45 or over) have a lower average level of living score ($\bar{x} = 9.4$). While this pattern is roughly similar to that observed for income (Figure 12), it is perhaps less marked. Average household incomes for respondents 45 years of age and older were higher

Table 36. Level of living by income, education, age, household size, and years resident.

	Average level of living score ^a	N
Household income (1978):		
≤ 5 000	7.69	48
5 001 to 19 000	6.89	54
19 001 to 25 000	8.66	53
25 001 to 30 000	9.45	42
30 001 to 38 000	10.37 ^b	65
38 000+	10.66 ^b	58
Education (yr.):		
≤ 9	8.61	61
10 to 11	8.40	85
12	8.66	107
13 to 15	9.45	83
16+	9.30	57
Age (yr.):		
≤ 24	6.35	91
25 to 29	8.28	99
30 to 34	9.52	86
35 to 44	11.03 ^b	76
45+	9.40 ^b	40
Household size:		
1	6.08	36
2	8.55	83
3	8.33	75
4	9.41 ^b	106
5+	9.64 ^b	95
Years resident in Fort McMurray:		
≤ 0.5	6.73	56
0.5 to 1.0	6.23	56
1.0 to 1.5	7.68	44
1.5 to 2.5	9.52	73
2.5 to 4.0	10.29	62
4.0 to 7.0	9.55 ^b	45
7.0+	11.06 ^b	49

^a Higher average scores represent a higher level of living.^b Differences are statistically significant ($p < 0.01$).

than only the under 25 age group. Average level of living scores are only slightly lower than those for the 30 to 44 age cohort. This may reflect something of the cumulative nature of ownership of many of the possessions included in the index.

Other life-cycle factors also had significant effects on standards of living. Those who were married or living common law ($N = 306$) had significantly ($p < 0.01$) higher level of living scores than did the single ($N = 89$). Also, those living in large households had a significantly ($p < 0.01$) higher level of living scores compared to those living in smaller households (Table 36). This is notably different from the relationship between household income and household size, where there were no significant effects. Several other individual characteristics are unrelated to level of living (sex of respondent, education).

Perhaps the most important difference between income and level of living is found in the breakdown of level of living by years lived in Fort McMurray (Table 36). As with income, the level of living scores are noticeably higher after one year in Fort McMurray although, again, the most recent migrants appear to have brought more with them. Unlike the pattern for income, the level of living score continues to increase through all the rest of the categories. The long term residents do not have the same level of income that new arrivals enjoy. They do, however, appear to have more possessions. This may indicate that the negative effects of lower incomes on long term residents are not particularly severe.

There is a difference in level of living scores between households where someone is employed with an oil company ($N = 152$) and those where this is not the case ($N = 243$). The latter households averaged 8.3, while the former averaged 9.6, a difference that is significant at the 0.01 level. In brief, the level of living patterns in Fort McMurray resemble income patterns in several ways. Those who are married, have jobs with the oil companies, have lived longer in Fort McMurray, and are between 35 and 44 years of age are the groups scoring highest on the level of living index.

7.4.4 Vehicles, Household Possessions, and Investment

In disaggregating the overall level of living index, it is worth noting differences in internal consistency. The vehicles scale has a low Alpha of 0.44, but those who owned some vehicles should not necessarily be expected to own others. The investment index has a slightly higher Alpha (0.51), indicating that different kinds of investment were "spread" across different households. The only index with an "acceptable" level of reliability was that for household possessions (Alpha = 0.67). People who owned some of these goods tended to own others as well.

The vehicles index and the household possessions index are moderately correlated ($r = 0.44$), but neither of these sub-scales are highly correlated with the investment index ($r = 0.15$ and $r = 0.26$, respectively). Perhaps the vehicles index and the household possessions index reflect a consumer orientation somewhat different from the financial planning reflected in the investment index. Given these differences, a brief report on the three separate sub-scales is included.

Education was not significantly associated with the composite level of living scale (Table 36). Inspection of the effects of education on the individual components of this scale (Table 37) discloses the reason: education has a significant effect on only one of these three components. In Fort McMurray, the number of vehicles and the number of household consumer items per household do not vary significantly by education. All education sub-groups have roughly the same number of vehicles and items from the consumer check-list. However, level of education does predict amount of financial planning. Those with higher educations are significantly more likely to report having stocks, bonds, other property, and other indicators of investment and financial planning.

Years lived in Fort McMurray, unlike education, has a substantial effect on all three of these level of living indices. The longer the time in Fort McMurray, the more likely one is to have more than one or two vehicles. As people settle down they tend to

Table 37. Vehicles, household possessions, and property/investment indices by education and years lived in Fort McMurray.

	Vehicles Index (n = 427)	Household Possessions Index (n = 410)	Property/ Investment Index (n = 398)
Education (years):			
≤ 9	2.38	4.28	1.34
10 - 11	2.23	4.30	1.54
12	2.29	4.73	1.69
13 - 15	2.44	4.80	2.21
16+	2.18	4.51	2.46 ^a
Years in Fort McMurray:			
< 0.5	1.68	3.54	1.30
0.5 - 1	1.40	3.21	1.63
1 - 1.5	1.84	4.04	1.82
1.5 - 2.5	2.35	4.85	2.27
2.5 - 4	2.75	5.45	2.11
4 - 7	2.81	5.15	1.49
7+	3.42 ^a	5.50 ^a	1.84 ^a

^a Differences are statistically significant ($p < 0.01$).

purchase second cars and various recreational vehicles. Similarly, long term residents have a higher average score on the consumerism and the investment indices. This last relationship is interesting because it also has a significant deviation from linearity. The average score on this index of financial planning increases through the 2.5 to 4 year cohort and then drops off noticeably. Those respondents who came to Fort McMurray before the Syncrude plant came into production have less money invested in financial securities. This group, as we discovered earlier, also have considerably lower incomes. It would appear that their income is sufficient to accumulate household possessions in greater numbers than the cohort that moved in after them. This does not appear to be true of investments.

7.4.5 Multivariate Analysis

Returning again to the composite level of living index, a variety of independent variables were used to isolate independent effects. The results are displayed in Table 38. The combination of four independent variables account for 23% of the variance in the level of living index. After adjusting for length of residence, age of the respondent does not add significantly to the predictive ability of the equation. Employment with an oil company does not have significant effects on level of living once income is controlled.

The three factors that do differentiate level of living in Fort McMurray are: stage in the family life cycle (marital status, household size), income, and length of time in the community. Net of the effects of the other variables in the equation, "couples" report a higher level of living (Beta = 0.199). Controlling on this, household size has a further additive effect (Beta = 0.139). The longer people have lived in the community (Beta = 0.236), and the higher their total 1978 household income (Beta = 0.236), the higher the level of living. The larger one's family, the more one

Table 38. Multiple regression equation: level of living with selected independent variables.

VARIABLE	B	St. error	Beta	F ^a	r
Marital status (couple = 1)	1.878	0.551	0.199	11.6	0.320
Years lived in Fort McMurray	0.284	0.061	0.236	21.5	0.271
Total 1978 household income	0.00006	0.00001	0.223	17.3	0.299
No. of household members	0.335	0.136	0.139	6.1	0.231
Constant	3.999				
	$R^2 = 0.226$			N = 310	

^a All effects are significant at the 0.05 level.

requires a variety of consumer items, the more money one makes the easier they are to obtain, and the longer one lives in the community, the more time to accumulate them.

7.5 DEBT

7.5.1 Introduction

A discussion of income distributions and level of living in Fort McMurray requires a parallel examination of debt patterns. Larson (1971:62) lists debt as one of the important problems facing residents of resource communities. The sudden opportunity to bring home a substantial salary apparently leads to changes in consumption patterns. Residents of single-industry resource communities, who may have come to these communities planning to stay only until they had saved some money, are enticed, because of the easy availability of credit, to go into debt to quickly raise their standard of living. Once in debt, they are trapped. To maintain the standard of living they have become accustomed to, they must stay with their present high-paying jobs (Van Dyke and Loberg 1978). This is a prevalent stereotype but one, as Larson (1979:62) notes, based on very little hard evidence.

A survey such as this cannot uncover the process through which debt patterns come into being. Average levels of debt can be calculated but, in the absence of any reliable comparison data, it is hard to say whether these levels are above or below average. What a survey of community residents can highlight are differences in levels of debt between groups in the community.

The question about debt referred to money owing to loan companies, banks, and credit card companies, excluding a mortgage on a home. Eighty-two of the respondents did not answer the question and one respondent filled in \$220 000. Since this one value is so much higher than all the rest (the next highest response was \$50 000), it continually skewed sub-group means in the analyses reported below. Consequently, it was dropped from the analyses of debt patterns.

7.5.2 Level of Debt and Differences Within the Community

The average debt reported by this sample was \$3925 with a large standard deviation of \$6207. About 31% (108) of those answering the question reported no debt at all. The cut-off point for the bottom 40% was \$900. On the other hand, the top 20% of the sample had debts ranging upwards from \$7000. This distribution demonstrates that the degree of indebtedness varies considerably across the Fort McMurray population.

Average debts reported by married/common law respondents ($N = 259$; $\bar{x} = \$4503$) were over twice as large as those reported by single (including separated, divorced, and widowed) respondents ($N = 88$, $\bar{x} = \$2224$). Years lived in Fort McMurray also has a significant ($p < 0.05$) linear effect on debt (Table 39). The longer the respondent had lived in the community, the larger the debt. Those with higher 1978 total household incomes and higher level of living scores reported significantly higher debts. However, age, education, household size, and whether or not someone in the household worked for an oil company did not reveal statistically significant between-group differences in debt.

There is evidence that respondents who use credit cards more often have higher debts (Table 40). Since total household income and debt are significantly positively related, this relationship may simply be a product of the positive association between credit card use and total household income ($r = 0.241$).

Debt as a proportion of income is an indicator of debt load. When total debt is divided by total 1978 household income, the average calculated proportion for the 332 respondents who answered both questions is 0.416. This average is extremely skewed, since 58% of these respondents reported debts which were 10% or less of their 1978 household incomes. Only 5% admitted to outstanding debts larger than their 1978 total household incomes. Table 40 reveals that the higher the 1978 income, the lower the proportion of debt to income. Those respondents with the least income had the least debt. Proportionate to their income, however, their

Table 39. Debt by income, level of living, education, age, household size, and years resident.

	Average Debt (\$)	N
Household income (1978):		
< \$5 000	1 040	46
5 001 to 19 000	3 263	62
19 001 to 25 000	4 244	57
25 001 to 30 000	5 442	41
30 001 to 38 000	3 811	69 ^a
38 000+	6 025	57 ^a
Level of living score:		
0 to 5	1 429	79
6 to 8	4 775	94
9 to 11	4 241	97
12+	5 050	77 ^a
Education (yr.)		
< 9	3 538	47
10 to 11	4 523	69
12	3 792	96
13 to 15	4 140	79
16+	3 424	55
Age (yr.)		
< 24	3 512	83
25 to 29	3 758	86
30 to 34	3 437	76
35 to 44	4 985	70
45+	3 738	30

continued...

Table 39. Concluded.

	Average Debt (\$)	N
Household size:		
1	3 411	37
2	3 935	73
3	3 436	61
4	4 135	94
5+	4 272	82
Years resident in Fort McMurray:		
≤ 0.5	2 455	49
0.5 to 1.0	2 832	49
1.0 to 1.5	4 590	42
1.5 to 2.5	3 641	72
2.5 to 4.0	3 549	56
4.0 to 7.0	6 294	31
7.0+	5 608	40 ^a

^a Differences are statistically significant ($p < 0.05$).

Table 40. Debt and debt to income ratios by credit card use and total 1978 household income.

	$\bar{x}$ Debt (\$)	$\bar{x}$ Debt/Total 1978 Household Income	N
Credit card use:			
Never	2728	0.673	121
Seldom	3410	0.199	75
Sometimes	4868	0.351	75
Often	6546	0.435	45
Very often	3717 ^a	0.114	30
Total 1978 household income:			
≤ \$5 000	1040	1.966	46
5 001 - \$19 000	3263	0.220	62
19 001 - \$25 000	4244	0.193	57
25 001 - \$30 000	5442	0.199	41
30 001 - \$38 000	3811	0.113	69
38 001+	6025 ^a	0.123 ^a	57

^a Differences are statistically significant ($p < 0.01$).

degree of indebtedness was the highest. Sex, age, marital status, and education of the respondent, years lived in Fort McMurray, and years spent at the present job along with credit card use, the level of living index and whether or not a household member worked for an oil company are all unrelated to this measure of debt as a proportion of total household income.

Only very preliminary inferences about the "trapped in debt in Fort McMurray" hypothesis can be drawn from this analysis. This hypothesis proposes that debt becomes a problem as people become accustomed to high standards of living which poorer paying jobs will not support. Our analysis does show that those with both higher standards of living and higher 1978 incomes and those who have lived a longer time in Fort McMurray do have the highest debts (Table 39). They also demonstrate that the proportion of debt to income decreases as income increases (Table 40). People may be able to borrow more money as their incomes increase and their length of residence in the community (stability) becomes greater. Despite this finding, it is still not clear whether these incomes are larger enough to allow both the continuation of the standard of living and the elimination of the debts.

7.5.3 Multivariate Analysis

Table 41 displays four regression equations each with debt (\$) as the dependent variable. When debt is regressed on income (Table 41A), a significant positive effect is found. In addition to a constant of \$1231, for every \$10 more of 1978 household income, about \$1 of debt can be expected. Using years lived in Fort McMurray as the independent variable (Table 41B), the equation shows that for each year of residence in the community, about \$350 more debt was accumulated. Again the effect is statistically significant. However, the effect of living longer in Fort McMurray may be spurious. That is, it may be caused by the fact that higher income households report more debt and longer term residents report higher incomes. Equation C in Table 41

Table 41. Multiple regression equations: debt (\$) with selected independent variables.

VARIABLE	B	St. error	Beta	F ^a	r
A. Total 1978 household income	0.105	0.022	0.272	23.5	0.272
Constant	1231.44				
B. Years in Fort McMurray	344.79	101.7	0.194	11.5	0.194
Constant	2908.58				
C. Total 1978 household income	0.096	0.022	0.250	19.8	0.272
Years in Fort McMurray	281.70	99.6	0.159	8.0	0.194
Constant	616.68				
D. Total 1978 household income	0.105	0.022	0.271	22.8	0.272
Years in Fort McMurray	342.64	103.8	0.193	10.9	0.194
Age	-78.67	39.9	-0.117	3.9	0.007
Constant	2667.83				
	$R^2 = 0.110$				N = 296

^a All effects are significant at the 0.05 level.

demonstrates that this is not the case. Both total 1978 household income and years lived in Fort McMurray have independent, significant positive effects on debt.

Equation D is the reduced-form multiple regression equation resulting from a step-wise regression analysis terminated at the point where the addition of further predicting variables did not significantly add to the explained variance. After accounting for effects of income, length of time in the community, and age, the remaining seven possible predictors did not increase our predictive ability. Sex, marital status, education, current employment status, whether or not someone in the household was employed with an oil company, and level of living did not enter equation D. The measure of credit card use also failed to enter this equation. This appears to answer the earlier question about whether it was higher income or credit card use (which is correlated with income) which is the important correlate of debt.

Although the three variables in equation D only account for 11% of the variance in debt, the results of this multiple regression analysis are nonetheless interesting. There is a clear indication that higher income is associated with larger debts. The strength of the zero-order relationship is not diminished when the effects of years in Fort McMurray and age are controlled. Similarly, the effect of length of time in the community remains as strong as before the control variables were introduced. The suppressed effect of age on debt ($r = 0.007$; $\text{Beta} = -0.117$) is less obvious in the zero-order results. Controlling on the other variables in the equation, age is negatively related to debt. This demonstrates that the positive relationship between years in Fort McMurray and debt cannot simply be attributed to age. People who have lived longer in Fort McMurray do not have higher debts simply because they have had a longer time to accumulate debts, either in Fort McMurray or somewhere else. Indeed, the negative partial effects of age on debt suggest the opposite. Apparently, there is something about living in Fort McMurray which is conducive to the accumulation of debts

since every year lived there appears to add about \$350 to a respondent's debt. The "trapped in debt in Fort McMurray" hypothesis receives a little more indirect support, but this "something" may be no more than becoming a better credit risk with greater stability. Since nothing is known of those who have left Fort McMurray, a more complete analysis of debt must await panel results.

7.6 SUMMARY

Incomes in Fort McMurray are considerably higher than the Canadian average, the Albertan average, and the estimated Edmonton average. Fort McMurray residents do not appear to receive high incomes because they are a select group of skilled or experienced individuals who would receive these incomes no matter where they lived. Instead, there is indirect evidence to show that individuals' incomes increase considerably after they move to Fort McMurray.

Men, those between the ages of 35 and 44, the better educated, and those working for the oil companies all report higher incomes. It appears that relatively older residents of Fort McMurray (over 44 years), and those who were living in the community prior to the latest surge of development have benefited less than somewhat younger and more recent arrivals in the community. Because of the small number of such individuals in the sample, the low average incomes reported by single parents and by native Indians warrant further research as estimates are unreliable.

In this community where incomes are generally high, the differences in income which can be attributed to education are minor. Our initial bivariate analysis showed education to have a significant positive effect on income, but a more detailed multivariate analysis demonstrated education's relative unimportance. Controlling on the effects of respondents' sex, age, and job seniority, and the number of months employed in 1978, education's additional effect on income is not statistically significant.

In terms of other forms of income, oil company employees receive more fringe benefits than do public sector employees (government and schools), and both groups have better fringe benefit packages than the rest of Fort McMurray's workers. The occupational groups that are better paid are also those with more benefits.

Standards of living are fairly high, but household "luxury" possessions are not particularly widespread, perhaps because of the youth and short residence of much of the sample. Investment appeared to be moderately widespread. Three basic factors are associated with the standard of living maintained by Fort McMurray residents. Respondents with larger households have more of the possessions constituting a higher standard of living, as do those with higher incomes and those who have lived longer in the community. While level of education is unrelated to the number of vehicles and household possessions owned, the more educated residents of Fort McMurray are more likely to have some form of (long term) financial investments.

The level of debt reported by this sample of Fort McMurray residents varies considerably. Approximately one-third of those who answered the question reported no debt. Respondents with high incomes and standards of living report more debt, but the proportion of debt to income decreases as income increases. Longer term residents of the community also admit to having higher debts. When income and age are controlled, length of time lived in Fort McMurray still has a positive effect on level of debt, suggesting that there may be something about living in Fort McMurray itself which leads to the accumulation of debts.

8. THE QUALITY OF WORK IN FORT McMURRAY

8.1 INTRODUCTION

As noted in earlier discussions of mobility, many of the residents of Fort McMurray probably came to the community for work-related reasons (Van Dyke and Loberg 1978; Matthiasson 1971). They, or another member of their household, might have come to look for work, to take a job already secured, or because they were transferred. Whatever the reason for coming in the first place, it is highly probable that the quality of employment obtained in Fort McMurray will have an effect on general adjustment to life in the community. Similarly, increased satisfaction with employment may lead to more positive perceptions of one's own psychological and physical well-being (Kohn and Schooler 1973).

The predominant work ethic in Canada is one which argues that the ability to get ahead in the work place is not a function of the social structure of organizations or society. Rather, it is the responsibility of the individual (Archibald 1976; Robinson et al. 1969). While much of the union movement tends to contradict this portrayal, it is one to which even the poor and the unemployed subscribe (Goodwin 1972; Williamson and Gartrell 1976). If an individual is not successful or does not like the job that he or she has, this ethic holds that it is up to them to do something about it or learn to live with it (Kahn 1972). In a cultural system which posits success as a direct function of merit, and satisfaction as a correlate of success, admitting dissatisfaction with a job is like calling oneself a failure (Faunce 1968; Ryan 1971). Consequently, direct questions about job satisfaction tend to elicit overly positive responses (Kahn 1972; Robinson et al. 1969; Williamson and Gartrell 1976; Archibald 1976b; Mouledoux and Mouledoux 1974).

There are a number of methods with which these constraints can be handled. Various specific components of the job (authority, relationships, promotions, fringe benefits) can be evaluated

separately. A composite scale can then be calculated from answers to these individual items. Moreover, a single, global question does not provide any information about the specific features of a job that are satisfying or dissatisfying. A second method uses measures of behavioural intentions in an attempt to remove normative constraints (Quinn et al. 1973; Burstein et al. 1975; Gartrell 1976). For example, a respondent might state that his job is satisfactory even if it is not, yet report that he would not recommend it to a friend. The speculative nature of such questions ("if the occasion arose ..."), presumably lessens the impact of "blaming" oneself.

A reduced sample composed of the currently employed (N = 305) is used throughout this analysis of the quality of employment in Fort McMurray. The principal measure of the quality of work is a scale formed from eight items measuring attitudes towards different aspects of the respondent's job. This is supplemented by responses to behavioural intention questions and respondents' evaluations of the "objective" characteristics of their jobs. However, general attitudes towards employment are examined first, and Fort McMurray workers are compared to those in the rest of Canada in this respect.

8.2 ATTITUDES TOWARDS EMPLOYMENT

8.2.1 Hypotheses

An assessment of workers' attitudes toward employment in Fort McMurray provides a useful introduction to a discussion of the quality of work. It also allows direct comparison with responses to the 1974 Work Ethic Survey conducted by Canada Manpower and Immigration (Burstein et al. 1975). In that survey, an effort was made to distinguish those Canadian who really wanted to work from those who were less committed.

It could be argued that the labour force of Fort McMurray must be committed to work, or else why would they move to Fort McMurray? The problem with this inference is that migrants may have come to work, or they may have been "forced" to move through other

circumstances. For example, some residents (many females) may have come because their spouse found employment in Fort McMurray. For this and other reasons (differences in jobs), males may feel more satisfied with their work than females (Hall 1975; Upjohn Institute 1973).

If the community itself has an effect on job satisfaction, then we might expect lower job satisfaction among long term residents. Job satisfaction may be higher for older or married respondents who have greater demands placed upon them (larger families) and often have more "realistic" job expectations (Robinson et al. 1969; Upjohn Institute 1973). Those with higher status jobs which provide more benefits or higher incomes may be more committed to their employment. In other words, rewards create more positive attitudes (Miller and Form 1964). Similarly, those who experience failure (for example, unemployment) might be expected to have less desire to work (Goodwin 1972).

8.2.2 Survey Results

Currently employed respondents were asked to answer, on a seven-point scale, whether they strongly agreed (7) or strongly disagreed (1) that "Earning a living is the most important thing to me". About 59% agreed (5-7), 25% disagreed (1-3), and 16% chose the neutral category (4). The average score for this group of Fort McMurray workers was 4.90 ($S = 2.10$). The fairly weak positive response to this attitudinal stimulus signifies that, as a group, Fort McMurray workers feel only moderately committed to putting earning a living first in their lives. Other things may come before it for 40% of the population. Responses to the statements "I wouldn't mind being unemployed for awhile" and "Earning a living is the most important thing to me" are negatively correlated ($r = -0.289$). The less accepting of unemployment, the more likely one is to agree that earning a living is most important.

As for the overall appeal of unemployment, the survey results suggest that most of the Fort McMurray work force (69%) do not find unemployment attractive. In fact, 61% disagreed as

strongly as the scale allowed with the statement about the desirability of unemployment. Seven percent chose the neutral response category and 24% were in agreement with the statement. The results of the 1974 Work Ethic Survey (Burstein et al. 1975) allow us to compare these responses with those from a national sample of adults ($N = 1327$). Respondents in that study were not allowed to choose a neutral response category when they were presented with the statement "I don't mind being unemployed for awhile". Sixty-one percent of that group disagreed and 39% agreed (Williamson and Gartrell 1976:15). A fairly large minority of Fort McMurray workers (31%) would accept not working at all. This is slightly lower than workers in the rest of Canada (39%) but high if compared to the 15 to 20% of workers usually judged to be dissatisfied (Kahn 1972). About 56% of the currently employed disagreed with the statement "If I could earn twice as much as I do now I would take any job". Almost one-third agreed with it. The correlation between responses to this item and the previous one about unemployment is not significant ($r = -0.006$; $p < 0.05$). However, there is a moderate relationship between this sentiment and the feeling that earning a living is most important ($r = 0.246$; $p < 0.001$). Respondents who would switch to any job if the salary was high enough are more likely to admit that making money is a major concern. Agreement with these items may indicate that respondents have adopted an alienated "capitalist ethic" in which they view employment as a means to an end rather than an end in itself. In this sense they are "separated" from the intrinsic nature of work (Archibald 1976a, 1976b).

Again, comparisons with the 1974 Work Ethic Survey show that the labour force in Fort McMurray is not atypical. In the Canadian labour force, one-third agreed with the statement that they would take any job if it paid \$7 per hour. The same proportion of the Fort McMurray population agreed that they would take any job for double their present wages.

Burstein et al. (1975:23), after assessing these national results, conclude that "Financial remuneration is very important,

but a lucrative wage is not an inducement that pre-empts all other considerations". In their somewhat naive conclusion they seem to have forgotten that they are not looking at a work force whose individual members make job choices on the basis of "other considerations" 33% of the time. Instead, they are describing a work force with 33% of its members admitting that they would make a job choice on financial considerations alone. This is a work force containing a relatively large number of individuals working, not because work itself is a satisfying experience, but because of the monetary rewards.

Whatever the interpretation, this limited evidence seems to indicate that Fort McMurray's labour force is fairly typical of the Canadian labour force. Workers in this community appear to be no different from average Canadian workers in their attitudes about the role that money plays in making work worthwhile, or in their attitudes towards employment in general. These results fail to confirm the stereotypes of workers in resource communities (Van Dyke and Loberg 1978; Porteous 1976). Workers in Fort McMurray appear to be no more (and no less) oriented towards short term financial gains than are workers in the rest of the country.

8.2.3 Within-Community Differences in Attitudes Towards Work

While overall levels of dissatisfaction with work were fairly high and similar to the rest of Canada, responses varied somewhat within Fort McMurray. Men attached greater importance to earning a living than did women, as did those with high incomes (Table 42). Men and high income groups also show greater commitment to employment itself (a negative reaction to unemployment). In Fort McMurray, as elsewhere, those with higher incomes appear to be more committed to work and earning a living.

More educated workers are less likely to agree that earning a living is most important, or that they would take any job for twice the pay. Perhaps education socializes people to treat money as less important, at least on this rather superficial level. As

Table 42. Attitudes toward work by sex, education and income.^a

	Attitudes Towards Work		
	Earning a living is most important to me	Wouldn't mind being unemployed for awhile	Would take any job for twice the money
Sex of respondent:	Averages		
Male	5.32	2.20	3.56
Female	4.14 ^b	3.28 ^b	3.14
Education:			
≤ 9	6.00	2.20	3.86
10-11	5.30	2.55	4.07
12	5.11	2.54	3.48
13-15	4.24 ^b	2.49	2.81 ^b
16+	4.31 ^b	3.09	3.07 ^b
Respondent's 1978 total income (\$1000's)			
< 1	3.63	3.16	3.47
1-7.5	4.27	3.11	3.60
7.5-18	4.61	3.03	3.01
18-27	5.58	2.70 ^b	3.58
27+	5.14 ^b	1.85 ^b	3.47

^a Only currently employed respondents (n = 305) included.

^b Differences are statistically significant (p < 0.05).

noted above, higher education is usually associated with greater job satisfaction, and here it appears associated with less pecuniary attitudes towards employment. The effects of education are not consistent across the other two items ("Unemployed" and "take any job").

A number of other independent variables were found to have non-significant relationships with these three attitudinal measures. Older workers and those who were married do not report more positive attitudes towards their employment. Similarly, workers with higher occupational status, and those with higher scores on the level of living index were no more likely to indicate greater agreement.

More interestingly, perhaps, respondents who have lived longer in Fort McMurray are no more or less likely to agree with any of these statements. Apparently, people have attitudes towards employment which are much like those of other Canadians, and the experience of living in Fort McMurray does little to alter them. Whether or not the respondent was employed by an oil company is also unrelated to these three attitude statements. On the basis of these very general questions about employment, there appears to be little evidence to suggest that individuals with specific types of work-motivation are attracted to employment with Fort McMurray's major employers. It was concluded earlier that responses to two of these statements were not very different from responses by a national sample. The present findings allow the additional conclusion that there is no real evidence to show that Fort McMurray itself attracts workers with particular types of work-motivation.

Finally, respondents' histories of unemployment (number of times ever unemployed) are not significantly related to any of these three indicators of attitudes toward work. There is no evidence that unemployment is a consequence of an "underdeveloped work ethic" or, conversely, that a negative (or positive) orientation toward work is a consequence of a history of unemployment.

8.3 BEHAVIOURAL INTENTIONS AS INDICATORS OF JOB SATISFACTION

Hypothetical "what if" statements are fairly sensitive indicators of job satisfaction (Burstein et al. 1975; Gartrell 1976). Currently employed respondents in this survey were asked two such "behavioural intentions" questions. The first asked the respondent if he or she would strongly recommend, probably recommend, have doubts about recommending, or advise against a good friend taking a job like the respondent's (and for the respondent's employer). The second question asked if, having the chance to do it all over again, the respondent would decide without hesitation to take the same job again, probably take it, have some second thoughts, or decide not to take it. The same questions, minus the "probably" response categories, were used in the national Job Satisfaction Survey (Burstein et al. 1975:29). This again provides a comparison sample (Table 43).

Only 45% of the employed respondents in Fort McMurray said that they would strongly recommend their job to a friend. Half of the sample exhibited some degree of uncertainty, while 5% were certain that they would advise a friend against taking the same job. A larger proportion of this sample (58%) stated that, if they could do it all over again, they would take the same job; 36% were not totally certain that they would do so. Of these Fort McMurray workers, 7% were certain that they would not make the same mistake twice.

The question about recommending the job to a friend probably carries fewer personal constraints of the type discussed earlier than does the question about taking the same job if one could start over again. Admitting that you would not make the same mistake a second time is an implicit admission that you made a mistake the first time. However, in the other question the focal point is the friend rather than the respondent. This may explain why, in Fort McMurray, 58% of the workers chose the most positive response to the question about doing it all over again, while only 45% chose the most positive response on the question about recommending the job to a friend.

Table 43. Job satisfaction: behavioural intentions, Fort McMurray (1979) and Canada (1974).

Fort McMurray ^a		Canada ^b	
Recommend job to a friend:			
Strongly recommend	44.7	Strongly recommend	59
Probably recommend	39.8		
Have doubts about recommending	10.0	Have doubts	34
Advise against	5.5	Advise against	7
	100%		100%
Take same job again:			
Take job without hesitation	57.5	Take job without hesitation	61
Probably take job	22.4		
Some second thoughts ...	13.4	Some second thoughts ...	33
Decide not to take job..	6.7	Definitely not	6
	100%		100%

^a Sample sizes were 291 and 299, respectively.

^b Source: Burstein et al. (1975:29).

In the national sample, roughly the same proportion (about 60%) of the sample chose the most positive response to both of these questions. Thus, the Fort McMurray response to the "take the same job again" question is fairly typical. The level of satisfaction shown for both the Fort McMurray and the Canadian samples may be higher than that reported in other studies in the U.S.A. The Work in America report of the Upjohn Institute (1973) cites studies showing that only 43% of white-collar workers and 24% of blue-collar workers would choose the same job again. However, Fort McMurray workers are less likely than Canadian workers as a whole to state that they would strongly recommend their job to a good friend (Table 43). There is a suggestion here that Fort McMurray workers are somewhat less satisfied with their work than are most Canadian workers.

8.4 SELF-REPORTS OF JOB CHARACTERISTICS

Employed respondents were asked to use a seven-point scale to describe the complexity of their job (how much special training was required), the pace of work, and the repetitiousness involved in doing the job. Inspection of the responses to these questions can serve several purposes. First, a rough description of objective working conditions in Fort McMurray can be obtained. An attempt can be made to highlight those groups of workers in the community who, for example, must do more repetitious work. These self-reports of job characteristics can also serve as important independent variables in the analysis of job satisfaction which appears later in this section.

Three-quarters of these workers agreed that their jobs required special training. Fewer (57%) agreed that they were required to work fast, and 55% said their job required doing things over and over. In other words, about three-quarters of the working sample believed that they were employed in relatively complex jobs (job requiring special training). A little more than half of this group felt that their jobs were repetitious. However, this was not

necessarily the same one-half of the currently employed who felt that they had to work fast. Responses to the two items are only weakly correlated ($r = 0.107$; $p < 0.05$). Respondents who felt that they were doing repetitious work were somewhat less likely to believe their job required special training ($r = -0.131$; $p < 0.05$). Those required to work fast were slightly more likely to report the necessity of special training for their job ($r = 0.131$; $p < 0.05$).

Table 44 displays differences in reported job characteristics by sex and education of the respondent as well as by employer (oil company, public sector and other) and respondents' 1978 total income. Union membership (yes/no) was also tested but was found not to be significantly related to any of the job characteristics.

Men rated the complexity of their jobs, as indicated by the special training required, significantly higher than did women. Although this is a typical finding (Quinn et al. 1973), in Fort McMurray part of the explanation lies in the fact that the oil sands processing plants employ a larger proportion of men than of women. Also, as indicated in Table 44, there is a significant difference in job complexity by employer. Oil company employees rate the complexity of their jobs higher than do the rest of the sample. The findings that those with more education and higher incomes are more likely to feel that their job requires special training fits with this pattern

Women, more than men, tended to be in agreement with the statement about fast work being required. The majority of the employed women in this sample work in clerical or service jobs (Section 6) which, it would appear, require faster work than do the technical, processing, and construction jobs in which the majority of men are employed. The education of the respondent is also positively associated with the reported amount of fast work required on the job. The differences by employer are not statistically significant but those by respondents' 1978 income are. Respondents in the middle income brackets are most likely to report that they have to work

Table 44. Self-reported job characteristics by sex, education, income, and employer.

	Job Characteristics			N ^a
	Requires special training	Requires fast work	Is repetitious	
Sex of respondent:	Averages			
Male	5.65	4.46 ^b	4.34 ^b	193
Female	5.10 ^b	5.30 ^b	5.10 ^b	106
Education (years):				
≤ 9	5.11	4.06	4.74	35
10-11	4.75	4.61	4.82	60
12	5.44	4.80	4.60	80
13-15	5.76 ^b	5.07 ^b	4.75	67
16+	6.07 ^b	4.93 ^b	4.20	55
Respondents' 1978 total income:				
≤ \$1 000	5.42	3.63	5.05	19
1 001 - 7 500	4.49	4.68	4.54	37
7 501 - 18 000	5.11	5.10	4.70	72
18 001 - 27 000	5.82	4.93	4.33	60
27 001+	6.03 ^b	4.48 ^b	4.55	72
Employer:				
Oil company	5.82	4.62	4.42	119
Other	5.21 ^b	4.85	4.73	180

^a Sub-sample sizes vary slightly for different combinations of variables due to missing data.

^b Differences are statistically significant ($p < 0.01$).

fast at their job. In combination, some of these results are confusing. Nevertheless, it is quite apparent that oil company employees (men, the highly paid) do not consider their jobs to be overly demanding in terms of the speed of work required.

Women have a significantly higher agreement score on the statement about a job requiring doing things over and over. Again, this can probably be explained by the types of jobs (clerical and service jobs) held by the majority of women working in Fort McMurray. Education, employer, and income do not have a significant effect on this variable.

These job characteristics are of interest primarily because of their effects on job satisfaction. How do workers rate their jobs in terms of extrinsic, intrinsic, and social criteria?

8.5 JOB SATISFACTION

8.5.1 The Level of Satisfaction Among Fort McMurray Workers

The interview schedule used in this survey included seven positively phrased statements about different aspects of work. Respondents were asked to state whether they strongly agreed (7) or strongly disagreed (1) that their jobs were as described. These seven indirectly phrased job satisfaction items are ranked by level of average satisfaction (Table 45). There are three basic types of statements included in this list of seven (Gartrell 1976; Quinn et al. 1973; Burstein et al. 1975). These are statements about: (1) the social relationships found in the respondents' work place; (2) the intrinsic satisfactions of the particular job; and (3) extrinsic rewards of the job. Fort McMurray workers report a higher level of satisfaction with the first two aspects of work than with the third.

Currently employed respondents report the least satisfaction with the extrinsic aspects of work. The statements about the quality of fringe benefits and the fair handling of promotions had average agreement scores of less than five on the one-to-seven

Table 45. Satisfaction with specific dimensions of work.

Dimension of work	Work Evaluation ^a				$\bar{x}$
	Disagree (%)	Neutral (%)	Agree (%)	Non-Response (%)	
Friendly/helpful workmates	4.6	10.2	83.3	2.0	5.99
Enough authority to do own job	7.5	8.9	81.6	2.0	5.87
Can see results of work	9.5	11.8	76.7	2.0	5.66
Supervisor concerned about employees' welfare	12.8	15.1	65.6	6.6	5.39
Opportunity to develop special abilities	18.4	11.2	68.5	2.0	5.18
Good fringe benefits	22.6	15.1	59.3	3.0	4.81
Promotions handled fairly	22.3	20.3	45.9	11.5	4.58

^a The average score ($\bar{x}$) was calculated from the original "Strongly disagree (1) - (7) strongly agree" scale. In the table, "disagree" represents scores of 1, 2 and 3, 4 is considered a "neutral" score, and "agree" is represented by scores of 5, 6, and 7.

scale used. Supervision ranks fourth ($\bar{x} = 5.39$), with only "development of special abilities" ranked below any extrinsic factor. All of the other statements had average agreement scores above five. Social relationships on the job (friendly/helpful workmates and, to some degree, concerned supervisors) and intrinsic rewards of work (being able to develop special abilities, see results of work, and decide oneself how the job should be done) all elicited more agreement than extrinsic factors. In other words, respondents reported more satisfaction with these dimensions of their work. These results parallel quite closely the findings of the Job Satisfaction Survey (1973-74) with its national sample of Canadian workers. The analysts of that survey concluded that:

When aspects of jobs are ranked according to the satisfaction they provide in current employment, having enough authority and information, friendliness of co-workers and supervisors, having interesting tasks, and seeing the results of one's work emerge as the most satisfying characteristics. Less satisfaction is derived from job security, hours of work, quality of supervision, pay, fringe benefits, and promotional opportunities. (Burstein et al. 1975:60)

It is possible that Fort McMurray workers, like Canadian workers as a whole, simply find extrinsic factors more dissatisfying and intrinsic aspects more satisfying (Herzberg 1966). Alternatively, it may be more socially acceptable to complain about fringe benefits than about some of the other aspects of work included in the list. The relatively low satisfaction with extrinsic factors is all the more surprising given high incomes and benefits (Section 7). This will be examined further in a multivariate analysis below.

Since the seven items were (positively) interrelated, a composite job satisfaction scale was calculated by simply adding together the scores on the seven items. Because of missing data on some of the items, the scale could be calculated for only 266 of the 305 currently employed respondents. The reliability of this scale is reasonably high ($\text{Alpha} = 0.724$). Fort McMurray workers had an average score of 37.4 ($S = 7.43$) on this job satisfaction scale (maximum score of 49). This represents about 72% of the possible points on a scale of 0 to 100.

8.5.2 Job Satisfaction: Bivariate Relationships

8.5.2.1 Differences by demographic factors. A number of hypotheses, derived from previous research on the correlates of job satisfaction, can be made about expected differences in job satisfaction between demographic sub-groups of the Fort McMurray working population. Since men typically have higher paying and higher status jobs than women, men would be expected to report greater satisfaction with their jobs (Vroom 1964; Robinson et al. 1969). The positive correlation between age and job satisfaction has been noted frequently (Kahn 1972; Upjohn Institute 1973; Quinn et al. 1973). The explanation usually is that, with increased benefits that accompany seniority and with reduced expectations as people mature, reported job satisfaction increases. For the same reasons, married/common law respondents would be expected to report more satisfaction than single workers. Earlier it was noted that job satisfaction might translate into community satisfaction and participation. Presumably, the reverse might also be true. The longer an individual has lived in Fort McMurray, the more integrated into the community he or she may become. This may result in greater job satisfaction. Also, those who do not like their jobs may be more likely to leave. Consequently, a positive relationship between years lived in Fort McMurray and job satisfaction is hypothesized.

A one-way analysis of variance with the job satisfaction scale as the dependent variable and these four demographic variables, each in turn, as independent variables was performed. None of the hypotheses for demographic factors was supported, and detailed results will not be presented. There were small, but not statistically significant ($p > 0.05$) indications that married/common law respondents and older respondents were more satisfied with their current jobs. Life cycle factors had little bearing on job satisfaction. Contrary to predictions, men actually reported less satisfaction than women. Again, the difference was not statistically significant ($p > 0.05$) Length of residence in Fort McMurray was

positively related to job satisfaction but the relationship was not significant.

8.5.2.2 Social Status. It would be expected, for a variety of reasons, that respondents with higher social status (education, occupational prestige, and level of living) would report greater job satisfaction (Miller and Form 1964; Archibald 1976b; Robinson et al. 1969; Gartrell 1976). These respondents might, first of all, be less inclined to report dissatisfaction since it might reflect on their own capabilities. Higher satisfaction within this group could also simply reflect better jobs with more autonomy, less repetition, better working conditions and so on. Results already presented have shown that the better educated get higher status jobs and are more likely to be upwardly mobile (Section 6). However, education was also found to contribute little to income when other factors were controlled (Section 7). Higher satisfaction among the educated is therefore unlikely to be a consequence of higher incomes, particularly since monetary factors are less important for this group generally (Hall 1975).

A one-way analysis of variance failed to reveal any statistically significant relationships between social status and job satisfaction. The relationship between job satisfaction and level of living was in the hypothesized direction, but higher occupational prestige and higher education were both associated with lower job satisfaction. While recognizing that these two relationships were not statistically significant, the reversal of the direction from that hypothesized should be noted. A similar breakdown analysis with respondents' 1978 income as the independent variable was done on the assumption that there would be some constancy in incomes from 1978 to 1979. While the relationship was not statistically significant, income and job satisfaction, like job satisfaction and the other measures of social status, were found to be negatively correlated.

8.5.2.3 Other employment factors. Various features of respondents' employment histories might be expected to be related to job satisfaction (Goodwin 1972; Burstein et al. 1975:25). Respondents with less stable employment histories (more full-time jobs and more periods of unemployment) might be expected to report less satisfaction with their current jobs. The direction of the calculated relationships support this hypothesis (less satisfaction is reported by those with less stable employment histories), but the differences between groups are, once again, not statistically significant.

One of the seven components of the job satisfaction scale is an evaluation of the quality of fringe benefits. Respondents who reported receiving zero to three fringe benefits gave this item an average score of 2.88 on the 1 to 7 scale. Those who received from four to six benefits had an average score of 4.67 while those with seven to nine benefits had an average score of 5.75. Respondents with 10 or more benefits had the highest average ($\bar{x} = 5.97$). These large differences are statistically significant ($p < 0.001$), demonstrating clearly that those workers with the most fringe benefits (oil company employees and those employed in the public sector) are also appreciative of them. However, when quality of fringe benefits is included as only one of the seven items in the composite job satisfaction scale, a positive but nonsignificant ($p > 0.05$) relationship between the number of benefits received and job satisfaction is found.

Union membership also failed to have a significant effect on job satisfaction in a one-way analysis of variance. Measures of the length of time the respondent had held his or her present job and of the length of time the worker had been resident in Fort McMurray were not associated with the dependent variable. As noted below, the fact that long term residents did not show significantly greater job satisfaction is partially a result of the techniques of analysis. There was a significant positive correlation ($r = 0.21$).

The only independent variable which appeared to have an effect on job satisfaction in this analysis of variance was whether

or not the respondent worked for an oil company. Since oil company employees tend to have higher salaries and higher status jobs we should, by now, expect that they would report less satisfaction than non-oil company employees. This is indeed exactly what the analysis of variance showed. The average job satisfaction score for oil company employees is 36.3. The average score for the remaining currently employed respondents is 38.3 ($p < 0.05$). A further test revealed that job satisfaction scores for public sector employees did not differ significantly from those of the other non-oil company employees.

By way of summary, these results suggest that the questions used are sufficiently factual so that the social status, employment history, and life cycle situation of workers do not dramatically influence their perceptions of their jobs. In this sense, reports appear to be without individual "bias". The lower job satisfaction inferred for oil company employees is particularly interesting. So too is the tendency for status factors to be negatively related to job satisfaction. Both findings are the opposite of what was predicted.

8.5.3 Job Satisfaction: Multivariate Analysis

The inability to identify significant differences in job satisfaction between groups of Fort McMurray workers requires further attention. There is a reasonable amount of variation on the job satisfaction scale so the blame cannot be placed on the inability of the measure to discover differences. There are really only two other explanations. In Fort McMurray, job satisfaction may simply not vary systematically across any identifiable groups. This is relatively unlikely given the findings of previous research in other communities. The answer must lie in the type of analysis used. Some of the variance in the independent variables is lost when they are categorized for analyses of variance. Furthermore, the possibility of suppressed effects cannot be considered in bivariate analyses. Consequently, a multiple regression analysis of the predictors of job satisfaction in Fort McMurray is introduced.

Earlier in this Section, respondents' descriptions of various aspects of their jobs were discussed. These were job complexity (as indicated by requiring special training) and the pace and repetitiousness of work. Although a minority of workers like simple, routine jobs (Walker and Guest 1962), faster and more repetitious work is generally considered less satisfying, while those jobs requiring more training are considered more satisfying (Upjohn Institute 1973; Quinn et al. 1973). The general attitudes toward work discussed above could also be associated with job satisfaction. Presumably, greater commitment to employment in general would be positively associated with job satisfaction (Burstein et al. 1975). These job description measures and the three work attitude indicators were added to the lengthy list of possible predictors (Table 46).

Table 46 displays a multiple regression equation in which the job satisfaction scale is the dependent variable. The reduced form equation is the result of a step-wise multiple regression analysis in which all but one of the variables used in the analyses of variance described above were used as potential predicting variables. Respondents' 1978 income was omitted since missing data on this variable reduced the sample by a further 10%. People who have lived longer in this community are significantly more likely to report more satisfaction with their job ($Beta = 0.169$). The dissatisfied may also be more likely to leave. Net of this effect, the more educated employed respondents tended to report significantly less satisfaction ($Beta = -0.174$). The effects of both oil company employment ($Beta = -0.298$) and fringe benefits ($Beta = 0.252$) are suppressed, as are the effects of education (betas larger than zero-order correlation coefficients). These variables, along with indicators of the repetitiveness of the work ($Beta = -0.161$) and the amount of training required ($Beta = 0.123$), explain a modest 16% of the variation in the job satisfaction index.

Job satisfaction in Fort McMurray, as measured by the seven-component index, appears to be a partial function of a number

Table 46. Multiple regression equation: job satisfaction with selected independent variables.

VARIABLE	B	St. error	Beta	F	r
Years in Fort McMurray	0.427	0.167	0.169	6.57	0.194
Job is repetitious	-0.594	0.244	-0.161	5.94	-0.164
Education	-0.464	0.181	-0.174	6.59	-0.137
Job requires special training	0.592	0.342	0.123	3.00 ^a	0.141
Employed by oil company (yes = 1)	-4.509	1.345	-0.298	11.23	-0.120
Fringe benefit scale	0.604	0.221	0.252	7.49	0.079
Constant	39.760				
	$R^2 = 0.156$			N = 204	

^a Significant at the 0.10 level. All other effects are significant at the 0.05 level.

of factors. Using an uncategorized variable, longer term residents are significantly more satisfied with their work. As residents of Fort McMurray become more integrated into the community and the dissatisfied leave, an increase in job satisfaction levels appears to occur. Controlling on the education of the respondent (and on other variables in the equation), greater job complexity leads to more satisfaction, a finding supported by results obtained from a national sample (Gartrell 1976:20). As was predicted, repetitious work is considered less satisfying. The finding that respondents with higher education report their work to be less satisfying (net of other effects) is exactly the opposite of the relationship generally reported in the literature (Robinson et al. 1969; Vroom 1964; Gartrell 1976). The explanation may be that less educated respondents view work in Fort McMurray as a chance to get ahead financially, while more educated workers (technicians, managers, and other higher status employees) view work in Fort McMurray as second-rate compared to jobs in other Canadian urban centres. Results from the analysis of income and benefits (Section 7) support this contention, since there were not significant increments in either for those with higher education. Indeed, closer inspection of the one-way analysis of variance for job satisfaction and education shows that it is those with low educations (9 years or less) who have high satisfaction scores ($\bar{x} = 40.5$, $N = 32$).

Net of these other variables' effects (Table 46), oil company employment and the number of fringe benefits received are the most powerful predictors, the former having a negative effect and the latter a positive one on job satisfaction. While the positive effects for benefits are as expected, the negative effects for oil company employees invited more detailed analysis. A second step-wise regression analysis was performed in which respondents' 1978 income was added to the list of independent variables used in Table 46. Years in Fort McMurray, education, and "special training required" remained significant predictors of job satisfaction and were joined by the income measure (Beta = -0.236). Employment with an oil company (yes/no) is positively correlated with 1978

respondents' income ($r = 0.249$) as is the fringe benefit scale ($r = 0.343$). Consequently, these variables appeared to be "replaced" in the equation by the income measure. Since this replacement obscures the positive effect of fringe benefits on job satisfaction, it was felt that there was more explanatory merit in presenting and discussing the equation in Table 46. Nevertheless, the negative relationship of income with job satisfaction supports the conclusion that higher status workers are less satisfied.

Tentatively, this appears to be the explanation for the observed effects of working for Suncor or Syncrude. As already noted, the effects of oil company employment are suppressed until a number of other variables are statistically controlled (Table 46). This interaction of effects can be partially unravelled with a two-way analysis of variance with education and oil company employment acting as independent variables (Table 47). Among those workers who never completed high school, oil company employees report more satisfaction ($\bar{x} = 39.4$) than do the rest of the currently employed ($\bar{x} = 37.4$). Considering those workers with 12 or more years of education, satisfaction among oil company employees drops noticeably while, for non-oil company employees, the average job satisfaction score remains at the same relatively high level.

Thus, while the overall effects of both oil company employment and education on job satisfaction are negative, the relationships are not quite as simple as this. The effects of education are being "amplified" by oil company employment. In Fort McMurray, education is not an important correlate of job satisfaction for non-oil company employees. Less educated and more educated workers in this group report roughly the same degree of satisfaction with their work. If anything, those with lower educations are less satisfied. On the other hand, among oil company employees, education is an important predictor of job satisfaction. It is possible that for the less educated, the financial rewards (income and fringe benefits) of working for Suncor or Syncrude may be more important. For the more educated, these monetary advantages appear to be ineffective creators of job satisfaction (Hall 1975).

Table 47. Job satisfaction by education by employer.

Education (years)	Oil Company Employment	
	Yes	No
≤11	39.4 ^a (33)	37.4 (54)
12	34.8 (20)	38.7 (47)
13+	34.6 (52)	39.0 (46)
N	105	147

^a Higher average scores signify greater satisfaction. Brackets contain cell frequencies.

8.6 THE QUALITY OF EMPLOYMENT: FORT McMURRAY IN 1969

The above results suggest some negative impact on job-satisfaction of working for the oil companies. Significant positive effects of length of residence in Fort McMurray were also observed. However, as mentioned several times above, this cannot substitute for the direct study of change. Matthiasson's 1969 survey results allow some limited comparisons of conditions "post-Suncor" (1969) and "post-Syncrude" (1979).

Matthiasson (1971:39) felt that his 1969 Fort McMurray data showed "strong support" for the idea that there is "a high level of job satisfaction in the community on the part of both males and females". Other writers (e.g., Himelfarb 1976:17) have cited this finding, despite the fact that Matthiasson's job satisfaction results were calculated using the total sample, not just employed respondents! Approximately 45% of his sample did not report being in the labour force at the time of the interview, but at least half of these non-employed respondents answered the questions about quality of employment. While it is clear that this might bias the results, there is no way of knowing in which direction this bias might lie unless the results are recalculated. Thus, despite the problems with this data set (see Section 2), there is merit in obtaining from it any information on job satisfaction in Fort McMurray a decade ago. Comparisons of 1969 and 1979 allow a first, crude reading on changes in the (subjectively perceived) quality of employment with the building of Syncrude and the rapid development that accompanied construction.

Only those respondents who reported themselves in the labour force at the time of interviewing were selected for this analysis, producing a sub-sample of 251 respondents (55%) from the original 453. The responses of this group to the eight quality of employment items in the Matthiasson questionnaire were then inspected.

Respondents had been instructed to answer simply "satisfied" or "dissatisfied" with reference to each of the eight aspects of quality of employment listed. An average of about 13% of these employed respondents did not respond to each of these items. Only a small majority (55%) of the currently employed who did respond were satisfied with labour-management relationships, and about the same proportion (56%) were satisfied with union activities. An average of 70% of this 1969 labour force sample (again excluding those who did not respond) reported satisfaction with working conditions, opportunities for advancement, salaries, fringe benefits, vacation time, and job security. Since Matthiasson did not include any items specifying the intrinsic satisfactions of work, intrinsic-extrinsic comparisons cannot be made. The results (using only employed respondents) are similar to Matthiasson's (1971:39) analysis of the total sample in that he too found labour-management relationships and union activities to be the least satisfying. Although Matthiasson claimed that his results showed high satisfaction, 30% dissatisfied really appears only moderately high. Studies in the U.S.A. show consistent levels of 15 to 20% dissatisfied since World War II (Kahn 1972).

A job satisfaction scale was calculated from these eight items by simply assigning a value of one to each instance of satisfaction and a value of zero to each instance of dissatisfaction. The eight values were then summed. Because of missing data on some of these items, the sample was further reduced to 188 employed respondents. The average score on this job satisfaction scale was 5.38 ($S = 2.04$).

An analysis of variance completely parallel to that performed on the 1979 data was not possible since many of the necessary variables are not available in the 1969 data set. However, the job satisfaction scale could be broken down by age, sex of respondent, marital status, education, and length of time in the community (Table 48).

Table 48. Job satisfaction in Fort McMurray in 1969 by sex, age, marital status, and education.^a

	Average job satisfaction score ^b
Sex of respondent:	
Male	5.287
Female	6.042
Age (years):	
≤ 19	6.300
20-29	5.360
30-39	5.200
40+	5.436
Marital status:	
Married	5.301
Other	5.781
Education:	
≤ Grade 8	5.105
Some high school	5.431
Graduate of high school/technical school	5.224
University, etc.	5.800

^a Sample size of 188 currently employed respondents.

^b None of these differences is statistically significant ($p > 0.05$).

As was observed for the 1979 survey results, women reported somewhat more satisfaction with work than did men, but the difference is not statistically significant ($p > 0.05$). Married respondents appear to be less satisfied than those who are not married (the opposite of 1979 results), but again the difference could have occurred by chance ($p > 0.05$). Education is an important predictor in the 1979 survey, but in the 1969 survey it has virtually no effect on job satisfaction. If anything, there is a very weak positive association. Age differences were not significant, although satisfaction dropped markedly for those over 19. Once again, these effects are the opposite of those observed for 1979.

The one variable that has a significant effect on satisfaction with work is length of time in Fort McMurray (Figure 14). The longer the respondent had been in the community, the less satisfaction was expressed. In the 1979 survey it was found that length of time in the community was positively associated with satisfaction. In order to compare results from these different metrics, both are transformed into scales ranging from 0 to 100. The average score for the 1969 survey results was 67.3. For the 1979 sample the average score was 72.4. Over the decade the average amount of job satisfaction had increased somewhat. Certainly there were no signs of negative impact of rapid growth.

From this limited evidence, it appears that overall average job satisfaction increased from 1969 to 1979. Furthermore, the pattern of job satisfaction differences across migration cohorts point to a more positive situation in 1979 (Figure 14). Both 1969 and 1979 saw a sharp decrease in job satisfaction over about the first year that respondents had lived in Fort McMurray. Those who came after Syncrude was built do not have as high job satisfaction as did those who came following the construction of Suncor. If they become like those who have been in the community a little longer (about 1 year), they will not have as far to "fall" either. From that point, trends diverge. In 1969, long term residents had the lowest job satisfaction. In 1979, long term

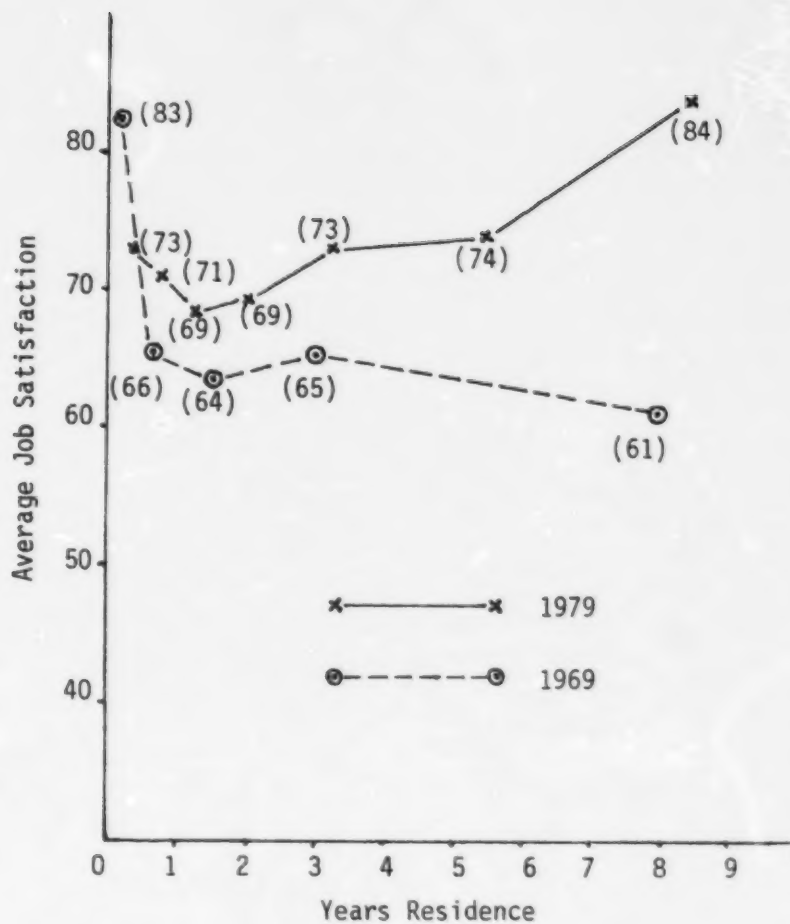


Figure 14. Job satisfaction by length of residence in the community; 1969, 1979. Original job satisfaction indices transformed into 0 to 100 scales.

residents had the highest. The overall trend is negative in 1969, but positive in 1979. Longer "exposure" to the community had negative effects on job satisfaction in 1969. In this sense, living in Fort McMurray appeared to have had negative effects on the quality of work perceived by residents. Exactly the opposite was the case in 1979. Living longer in the community appeared to have positive effects, even after adjustments were made for other factors (Table 46).

8.7 THE QUALITY OF EMPLOYMENT IN FORT McMURRAY: SUMMARY

Underlying this analysis and discussion of job satisfaction in Fort McMurray is the assumption that satisfaction with employment is a positive correlate of general satisfaction with life. This assumption will be examined more directly below (Section 11). The survey results show a moderate level of job satisfaction. About three-fifths of the currently employed respondents (roughly the same as the national average) stated that they would take the same job again if they could do it all over again. Slightly less than one-half said that they would strongly recommend their job to a friend. In a 1974 national survey, about 60% said they would do so. There is some evidence here that Fort McMurray workers may not be quite as satisfied with their jobs as their national counterparts, but differences are small.

Fort McMurray workers also differ little from Canadian workers in general in their attitudes toward making money and being unemployed. Most agreed that earning a living is the most important thing for them and about three quarters of the employed respondents "rejected" the idea of being unemployed. About one-third admitted they would take any job if they were paid well for it. The labour force in Fort McMurray was as committed to "the work ethic" as were other Canadian workers. In responding to these questions, both residents of Fort McMurray and Canadians in general showed a moderate amount of "alienation" from work.

Men and relatively highly paid employees (obviously overlapping categories) are more inclined to insist on the primacy of earning a living and staying in the labour force. More educated respondents are less insistent that earning a living and making a lot of money are of primary importance. There is no relationship between employment instability and commitment to work. The relatively unstable work histories of Fort McMurray workers did not seem to lower general commitment to the work ethic.

About three-quarters of these Fort McMurray workers reported that their jobs required special training. More than half stated that their jobs required fast and repetitious work. Men were more likely to describe their jobs as requiring high training while women were more likely to be in jobs requiring fast and repetitive work.

Fort McMurray workers, like Canadian workers in general, report more satisfaction with the intrinsic than with the extrinsic rewards of work. In the multivariate analysis of job satisfaction, more fringe benefits were found to translate into more job satisfaction. Those with more complex jobs found them more satisfying, and repetitious jobs were considered less satisfying. People who had lived longer in the community were more satisfied with their jobs. Workers may get better jobs, or adjust to their circumstances with time. Also, the dissatisfied may leave in disproportionate numbers. Whatever the reason, there is no evidence of negative effects of living in the community for a longer time.

A finding of some interest, since it differs from most research results, is that the more educated workers reported less job satisfaction. This negative relationship between education and job satisfaction was also found in an analysis of the correlates of the "behavioural intentions" measures. Oil company employees were significantly less satisfied with their work. Controlling on the complexity and repetitiveness of work, fringe benefits (of which the oil company employees receive more), differences in education and in length of time in the community, oil company

employees are still less satisfied than other members of the Fort McMurray labour force. Indeed, it appeared that the best paid (highest income) workers were more dissatisfied, and that this may have been the reason for the negative effects of oil company employment. Paradoxically, the very thing (money) for which most people supposedly come to Fort McMurray, brings greater perceived dissatisfaction with work. In this sense, the experience may be viewed as alienating.

Re-analysis of Matthiasson's 1969 Fort McMurray data allows us to tentatively conclude that job satisfaction was moderate a decade ago. However, from the evidence at hand it appears that job satisfaction levels have increased somewhat over the decade. There is little sign in these results of negative impacts of development. A major predictor of job satisfaction in both 1969 and 1979 was the length of time the respondent had lived in the community. Newer residents reported greater satisfaction with their work. Today the opposite is true. The longer a respondent has lived in Fort McMurray, the more job satisfaction is reported. This corroborates the conclusion that conditions have improved.

9. SOCIAL PARTICIPATION: ORGANIZATIONS, NEIGHBOURS, AND FRIENDS

9.1 SOCIAL RELATIONS IN URBAN SETTINGS

9.1.1 Community Lost or Individual Freedom Gained?

Van Dyke and Loberg (1978:97) note that social rather than geographic isolation seemed to be the more acute problem in Fort McMurray. They quoted informants to the effect that rapid growth had created a situation where the "old friendliness" was gone, neighbouring was low, and the majority took no interest in community affairs (1978:67). "I have lived here 18 months and don't have the foggiest idea who my next door neighbour is" (1978:37). "As far as ... participation is concerned, it has to be the worst of any place I have ever seen ... you have to almost railroad people into accepting community responsibilities here" (1978:104). "The old friendliness and knowing everybody has gone and is replaced by a large population typified by hostility and anomie" (1978:72).

These residents of the community were volunteering observations about a loss of "community" or a weakening of social networks. Some sociologists have argued that urbanization, more highly specialized division of labour, and massive industrial transformations have greatly affected the structure of social networks within modern society. Generally speaking, this "community lost" hypothesis (Wellman and Leighton 1979) has argued that primary ties to kinship, neighbourhood, and friendship networks have been weakened, making the individual increasingly dependent upon formal organization resources which involve secondary ties (Stein 1960; Nisbet 1962; Gusfield 1975; Mellor 1977; Castells 1976). Urbanism as a way of life (Wirth 1938) leads to a loss of primary networks and this in turn creates social disorganization (Bender 1978; Popenoe 1977).

The geographic mobility necessarily associated with rapid growth and development in boom-towns reputedly creates social impermanence, social disorganization, and apathy (Summers et al. 1976;

Himelfarb 1976; Lucas 1971; Larson 1979). New residents do not plan to stay. Hence, they do not put down "roots" by participating in voluntary associations or getting to know their neighbours. Even if they do participate, such a high proportion of the population are new residents at any one time that they have not had the time to form the links necessary for high involvement. Without the social integration that informal participation brings, isolated individuals may lack the social support necessary to maintain satisfactory lifestyles. Social agencies may be called upon to provide the necessary resources, and this may create increased costs for social services. These reputed negative effects of low stability on network interaction are supposed to be some of the negative impacts of rapid resource development.

The empirical status of these hypotheses as accurate descriptions of modern urban life has been questioned. First of all, people within a given locality must interact to some degree, if only to meet problems arising out of their common life in the area (Wilkenson 1978). Furthermore, numerous authors have pointed out that friendships and participation are not necessarily spatially bound (Wellman and Leighton 1979). Mobility does not necessarily lead to a loss of primary relationships (Hunter 1975; Fischer 1976), and urbanites still form neighbourhood ties (Warren 1978; Gans 1967; Liebow 1967). Memberships in multiple networks and a larger number of weak ties bring a certain degree of individual freedom (Wellman 1979). They provide indirect access to a greater diversity of resources than do stronger but less wide ranging ties (Granovetter 1973).

To the residents of Fort McMurray this "freedom gained" has sometimes been a matter of leaving interfering relatives (Van Dyke and Loberg 1978). Several of Van Dyke and Loberg's respondents are also quoted to the effect that social networks are easily formed. "People help each other alot, not like an established town where you are trying to break in" (1978:75). "It doesn't take transient

people long to make friends" (1978:73). Most importantly, perhaps, the whole idea of coming to Fort McMurray is to become financially independent... "stepping out into independence" (1978:109).

Which of these two descriptions seems to best fit the residents of Fort McMurray? Are they urban isolates, unconnected to neighbours or friends, or do they participate in a variety of networks that can provide social support? To answer these questions social life in Fort McMurray should be compared to that in other cities. Participation levels before and after the building of Syncrude should also be assessed. Comparisons across migration cohorts will also allow inferences about the development of network ties as length of residence increases. In order to paint a comprehensive picture of social relations, different kinds of network ties are considered: associational memberships and activity, knowing neighbours and interacting with them, and getting together with friends. Because of the importance of the family to social adjustment, family and kinship ties will be discussed in Section 10.

9.1.2 Dimensions of Participation

Participation in voluntary associations allows the individual in modern society the freedom of individual choice in expressing and seeking values (Nisbet 1962; Wellman 1979). The greater the diversity of affiliations, the greater the opportunities to mobilize social resources.

The 1979 survey of Fort McMurray asked residents how many memberships in associations they had, and how often they had attended meetings within the month prior to the survey. Specific questions concerning religious and union organizations were also included, since these are the most common kind of associations to which people belong (Curtis 1971). Respondents were asked how many hours they had spent in voluntary work during the month previous to the survey, and a second set of questions asked respondents to name people who held offices within the community. These indicators were used as measures of community involvement. The ability to name the

Chairman of the Town Board (Mayor), the Member of the Alberta Legislative Assembly (M.L.A.), the Town Manager, and the Northeast Alberta Region Commissioner appointed by the provincial government, was taken as an indication of at least passive involvement in community affairs.

Involvement in local neighbourhoods was measured by asking how many of the adults in the neighbourhood respondents would know by name if they met them on the street. Responses were organized in fixed categories varying from "none" (0) to "all of them" (7). Frequency of interaction with neighbours was indicated by how often respondents got together with any of their neighbours for a chat ("never" = 0 to "daily" = 7). Similar response categories were used to find out how often respondents visited with friends in Fort McMurray. Questions were also asked about frequency of contact with friends outside Fort McMurray (by letters, phone, or visits).

9.2 ASSOCIATIONAL AFFILIATION AND COMMUNITY PARTICIPATION

9.2.1 The Level of Activity: Membership and Meetings

Participation in formal associations was low among residents of Fort McMurray, but apparently not lower than one finds elsewhere (Hyman and Wright 1971). Relative to participation levels for the population in Canada at large, Fort McMurray was not low. Also, the level of associational affiliation had not decreased over the period of rapid growth between 1969 and 1979.

A majority of the sample, 56%, claimed membership in one or more organizations. On the other hand, less than half that number, only 27%, had attended a single meeting (or more) in the month previous to the interview. A similar proportion (24%) had been to church once or more over that same time, and 25% had done some volunteer work. For each of these three indicators of participation, about three quarters of the sample indicated that they had not participated at all.

One hundred and thirty-four out of the 430 respondents (31%) indicated that they belonged to a union. Suncor is unionized while Syncrude is not. Of those who belonged to unions, 41% indicated that they "never" participated in union activities. A further 19% "seldom" participated. About 29% participated "sometimes", and 12% participated "often" or "very often".

The absolute level of participation in formal organizations (including unions) appeared to be low. However, the relative level of associational affiliation was not low when it was compared to other samples (Figure 15). As Hyman and Wright (1971) have documented, even though the percentage of American adults who belonged to organizations increased from the 1950's to the 1960's, voluntary association membership was not "characteristic of the majority of American adults" (1971:191). Hyman and Wright perhaps exaggerate, since a majority of their sample (57%) did participate (Figure 15).

This same finding has been confirmed for Canada, although the rate of affiliation was somewhat higher (Curtis 1971). Relatively speaking, residents of Fort McMurray appear to participate at a level close to this relatively high Canadian norm. Also, comparison of 1969 survey results for Fort McMurray (Matthiasson 1970,1971) and 1979 survey results indicates that the percentage of those with one or more affiliations dropped only slightly from 60% to 56%. This was more than compensated by an increase from 19% to 39% in the percentage of those with two or more affiliations. This increase was recorded without the new plant (Syncrude) having been unionized. Compared to the Canadian sample, residents of Fort McMurray had a slightly higher percentage of non-participants, but a higher proportion were affiliated with more than one organization.

9.2.2 Differences Within the Community

9.2.2.1 Hypotheses. There is little evidence of negative impact of rapid development on the overall level of organization affiliation. Still, the level of affiliation and participation might well

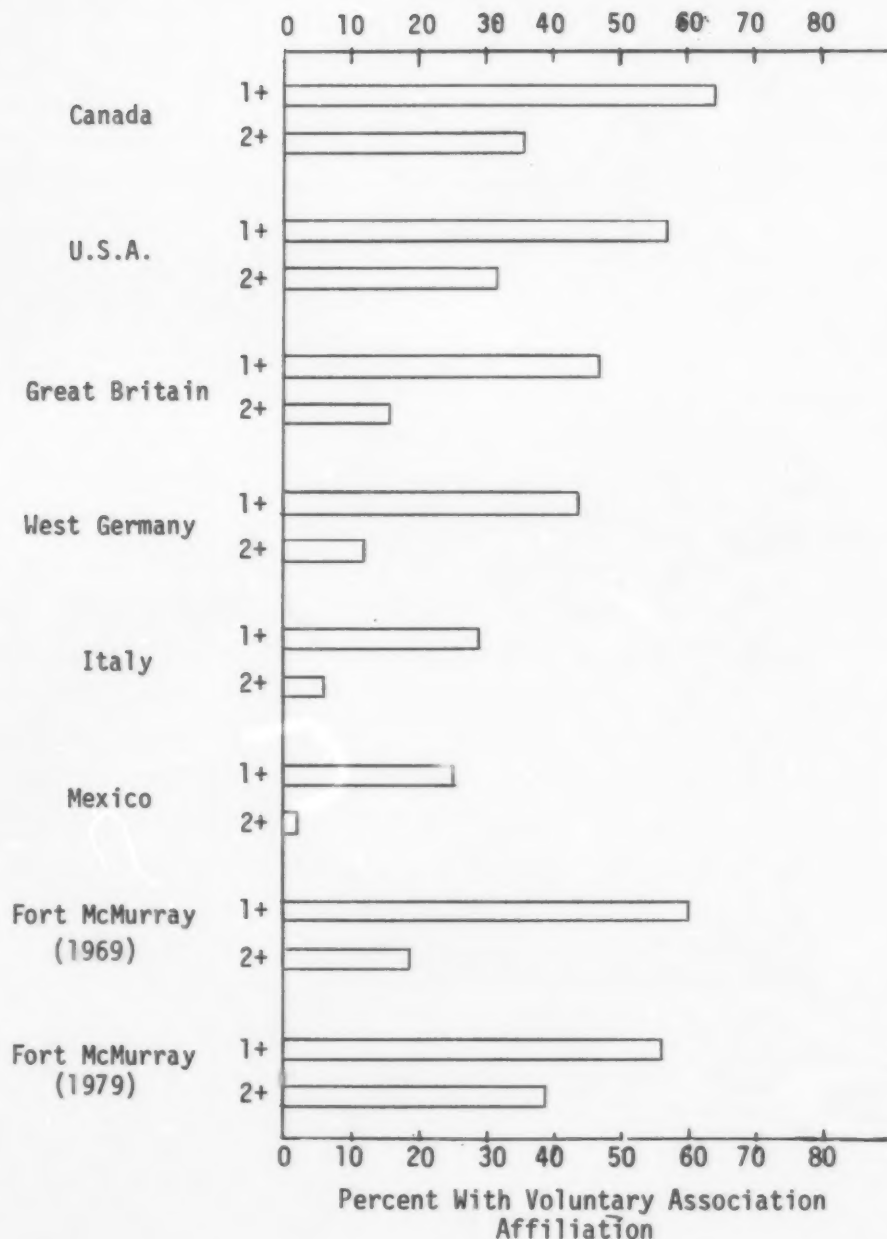


Figure 15. Association affiliations in six nations and Fort McMurray (1969, 1979). Sources are: Canada (Meisel 1970); other nations (Almond and Vera 1963); and Fort McMurray in 1969 (Matthiason 1970, 1971). "1+" and "2+" indicate the percentage with one or more, and two or more, voluntary association memberships (unions included).

show large differences within Fort McMurray. In other words, some people may participate a good deal more than others, even if the overall level is relatively high. Indeed, Curtis (1971) observed that the relatively high level of organizational affiliation in Canada and the U.S.A. was largely a consequence of those nations' relatively high participation rates for women. In other nations, women participated less.

Age and marital status have also been linked to associational participation. Curtis (1971) reported that the married participated more in all six nations he studied (Figure 15). Affiliation increases with age through middle age and then declines (Hyman and Wright 1971). Social status (education, income, occupational status) is consistently positively related to participation (Curtis 1971; Hyman and Wright 1971).

Examination of differences in demographic and social factors may help to locate possible negative impacts within the community. More importantly, given the relatively recent arrival of many of the residents of Fort McMurray, participation is likely to vary with length of residence in the community. It takes people time to develop associational "roots" in the community, even though some organizational memberships are "portable" from one community to the other. Through the comparison of migration cohorts, some preliminary estimates of how quickly this integration has occurred can be drawn. Are short term residents relatively "disconnected" from the organizational life of the community? Do "old-timers" carry the "burden" of participation? (Graham, Brawn and Associates 1975; Larson 1979:108)

9.2.2.2 Demographic differences. Males averaged more affiliations ($\bar{x} = 1.35$) than females ($\bar{x} = 0.89$) and this difference was significant at the 0.01 level. Church attendance in the month previous to the survey was higher for females ($\bar{x} = 1.09$ versus 0.59 for males), a difference that would happen by chance less than 5 times in 100. There were not significant differences by sex of respondent in

general participation in formal organization. Meetings attendance for all kinds of organizations was approximately equal for males ($\bar{x} = 1.08$) and females ($\bar{x} = 1.01$). Similar results were reported for hours of volunteer work (males $\bar{x} = 4.14$, females $\bar{x} = 4.67$).

While the single participated more than the married in all but church activities, there were no significant differences by marital status in participation. Age differences were in the direction predicted, with affiliation and participation generally increasing as age increased (Table 49). However, the only significant age differences were those for hours of volunteer work in the month previous to the survey ($F = 4.0$; $p < 0.01$). Average volunteer work increased fairly steadily for each older cohort until there was a marked increase for the small proportion (10%) of the sample 45 years of age or older. In this respect at least, older adults appear to do a good deal more than "their share" of community volunteer work.

9.2.2.3 Employment, social status, and participation. The employed ($\bar{x} = 1.24$) had significantly more organizational memberships ($t = 3.38$, $p < 0.01$) than those who were not employed ($\bar{x} = 0.76$). This latter group ($N = 124$) was made up almost entirely of women, and about one-half of the difference in memberships was attributable to union memberships. However, even when they are removed completely, the employed still have more associational affiliations ($\bar{x} = 0.93$) than the unemployed, but the difference was not statistically significant at the 0.05 level.

Those who worked for one of the major oil company employers did not show either high or lower rates of affiliation or participation. This parallels results reported by Summers et al. (1976:107) from several United States studies. In industrial plants that have moved into predominantly rural and small town areas, workers did not participate more than did other adults in the community.

There were, however, systematically higher rates of associational affiliation for respondents with higher social status. For example, analysis of variance results showed that the number of

Table 49. Association affiliation and participation by age.

Age	Affiliation/Participation				N
	Organization memberships (no.)	Meeting attendance (/mo)	Church attendance (/mo)	Volunteer work (h/mo)	
Averages					
<25	0.84	0.92	0.62	2.76	104
25 - 29	1.17	1.17	0.78	3.30	106
30 - 34	1.26	1.00	0.78	3.83	90
35 - 44	1.02	1.04	1.24	3.96	83
45+	1.30	1.10	1.07	12.91	43
Total	1.10	1.04	0.86	4.43	426

reported memberships varied significantly ($F = 5.04$; $p < 0.01$) from an average of 0.63 for those with less than 10 years of education, to an average of 1.62 for those with over 15 years of education. Home owners reported more memberships than did renters, and the higher the income the higher the average number of memberships. Memberships ranged from an average of 0.71 for those with 1978 household incomes of less than \$5000 per year, to 1.49 memberships for those with household incomes above \$38 000.

The only significant differences in the amount of participation were a function of differences in education. Those with higher levels of education participated more often (Table 50). People with 4 years or more of post-secondary educations reported very high levels of meeting attendance and voluntary work. Church attendance was not significantly related to education, but differences in both the other indicators of activity (meeting attendance and volunteer work) were significant at the 0.01 level. Since housing status (owners and renters) and income were not significantly related to meeting attendance and voluntary work, differences in active participation appeared to be more a matter of culture and socialization than they did of financial resources.

9.2.2.4 The development of association ties. Comparison of association affiliations and participation rates across migration cohorts allow the construction of an artificial picture of change over time. It is somewhat biased in that the sample contains only those that stayed in Fort McMurray. As a general working hypothesis, it can be predicted that length of residence in Fort McMurray would be positively related to all indicators of participation in secondary associational networks. This is what is found for organizational memberships.

The average number of association memberships increased markedly as length of residence increased (Figure 16). This trend continued through the cohort who moved to Fort McMurray during the height of the Syncrude construction between 2.5 and 4 years before

Table 50. Associational participation by education.

Education	Participation			N
	Meeting Attendance (/mo)	Church Attendance (/mo)	Volunteer Work (h/mo)	
	Averages			
<10	0.30	0.86	3.73	67
10 - 11	0.87	0.96	2.08	91
12	0.61	0.47	2.46	116
13 - 15	1.31	0.95	5.27	92
15+	2.48	1.32	11.17	61

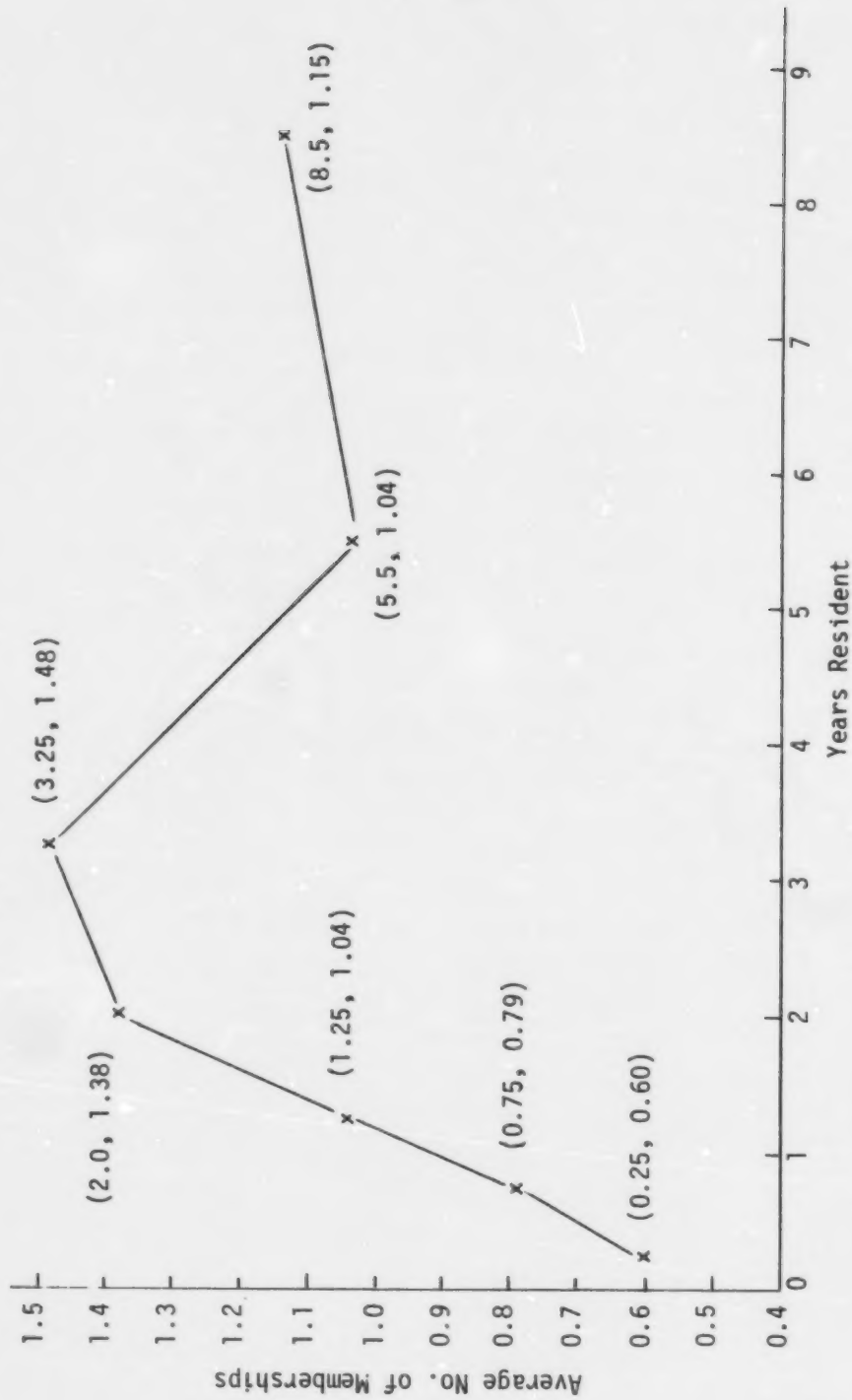


Figure 16. Associational affiliations by years resident. The median age for the cohort 7 years and over was set at 8.5 years.

the June 1979 survey. From a low average of 0.60 memberships for those who arrived during 1979, there is a monotonic, rapid increase of almost 250% to an average of 1.48 memberships for the cohort who arrived before June 1975. Longer term residents had somewhat lower levels of associational memberships. Given the timing of their arrival, it is difficult to attribute these lower memberships to rapid growth itself. Certainly there is no indication that long term residents are the ones who are the most active in this regard.

Meeting attendance and volunteer work both exhibited sharp increases after about 1 year of residence and then leveled off. Again, there was no indication that the "old timers" carried most of the "burden" of participation in community organizations. Indeed, over the whole sample, meeting attendance, volunteer work, and church attendance all failed to show systematic significant (at the 0.05 level) differences across migration cohorts.

9.2.3 Civic Awareness

9.2.3.1 Knowledge of office holders. About 43% of the respondents correctly identified the Chairman of the Town Board, and 20% correctly identified the M.L.A. The two appointed officials were known by considerably fewer of the sample. The Town Manager was correctly identified by 14% of the respondents, and the Regional Commissioner was correctly identified by 12%. They both appear to maintain a considerably lower profile than the elected officials.

In order to create a single index of civic awareness, the number of correct identifications made by each respondent were added together, yielding a five point scale ranging from 0 to 4.

9.2.3.2 Length of residence. As one would predict, length of residence was positively correlated with the number of officials correctly named. Analysis of variance results (Figure 17) showed that the longer the residence in the community, the more officials correctly named. Very few of those who had been in Fort McMurray

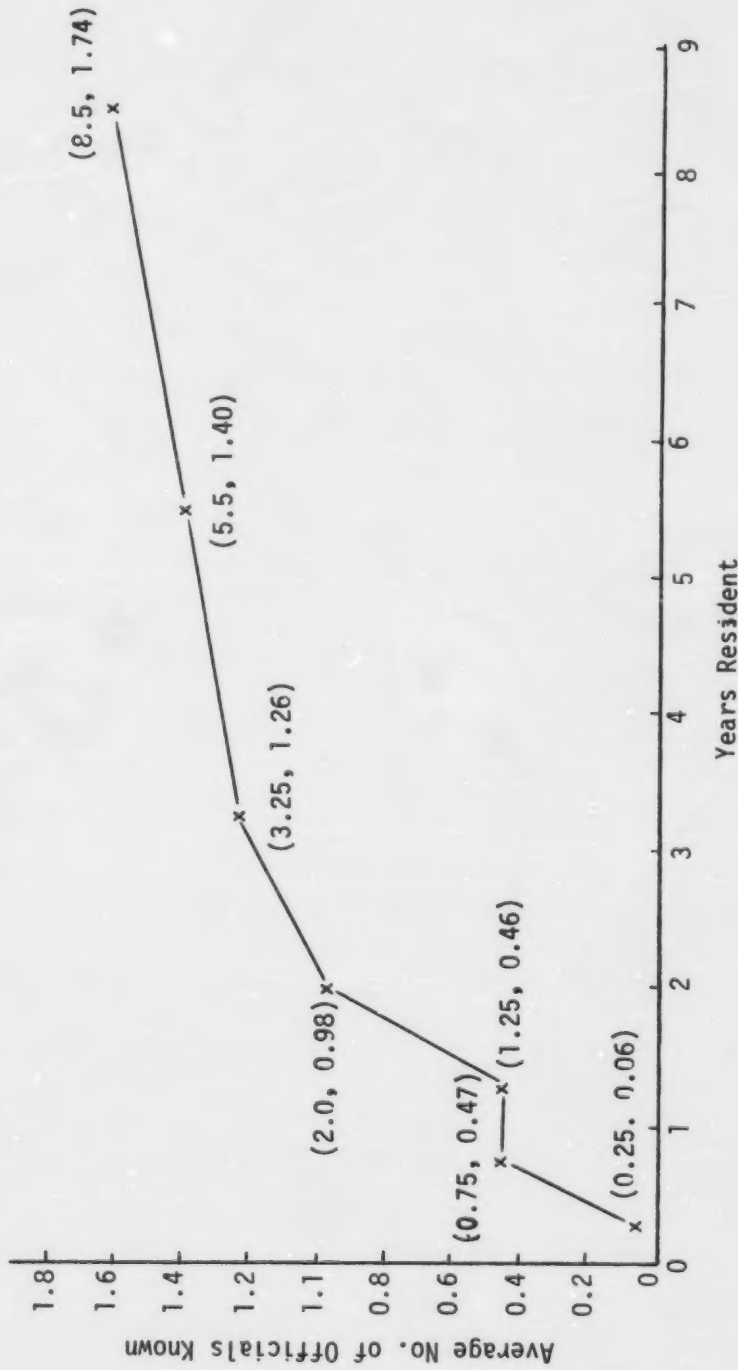


Figure 17. Civic awareness by years resident. The median age for the cohort 7 years and over was set at 8.5 years.

6 mo or less ($N = 65$) could correctly name any officials whereas long term residents (7 years or more) averaged 1.74 officials correctly named. One gains the impression that these levels of civic awareness in Fort McMurray seem relatively high, although no specific comparisons are available.

9.2.3.3 Additional correlates of civic awareness. Given these large differences by length of residence, and because of the importance of civic awareness to local political participation, a number of other correlates were examined. Indicators of social status were also examined as correlates of civic awareness with the hypothesis that status would have positive effects on knowledge of officials. Income had a weak positive correlation with civic awareness ($r = 0.119$, $p < 0.05$), providing some support for the hypothesis. Home ownership, education and level of living, were somewhat more strongly correlated with civic awareness ($r = 0.239$, $r = 0.268$, and $r = 0.328$ respectively, all significant at the 0.001 level).

Males, the married, and the employed did not have higher civic awareness. Neither were there significant differences for immigrants or for those who had previously lived in other isolated resource communities. The only demographic factor that had significant zero-order effects on civic awareness was respondents; age ($r = 0.296$, $p < 0.001$).

Area differences in civic awareness within Fort McMurray were also examined. Are residents of some areas more (or less) aware of officials' names? As it turned out, residents of Gregoire Park ($\bar{x} = 1.27$) and Beacon Hill ($\bar{x} = 1.16$) had the highest average scores. Those in Waterways had the lowest scores ($\bar{x} = 0.44$). Thickwood Heights ($\bar{x} = 0.95$), Lower Town ($\bar{x} = 0.82$), and Abasand ($\bar{x} = 0.66$) were in between. However, differences between areas accounted for only 3.2% of the variation in civic awareness ($F = 2.76$, $p < 0.05$).

Differences in housing type were analyzed with the expectation that those who lived in single family housing would be more aware of officials' names. The results showed that residents of

single dwellings averaged 1.40 officials known, while those who occupied mobile homes averaged 0.86. Apartment dwellers averaged 0.45, and those who lived in other multiple family housing averaged 0.71. Differences in house type explained a substantial 9.1% of the variation in knowledge of officials ($F = 14.3$, $p < 0.001$).

Finally, as a working hypothesis it was predicted that associational membership and active participation in voluntary associations and formal networks would have positive effects on knowledge of civic officials. This assumes that many of the voluntary associations act as interest groups in local politics. An index of previous voting behaviour in federal, provincial and municipal elections was included as an indicator of minimal participation in political affairs. Given the relatively recent arrival of many of the residents of Fort McMurray (29% within the year prior to the survey), this voting probably occurred in other communities as well as in Fort McMurray. It must therefore be interpreted with some caution.

Indicators of interaction with neighbours and friends were also included as possible predictors of civic awareness on the assumption that these networks might help diffuse such awareness. Friends and neighbours might represent one source of information about local politics, and who held what office. However, none of these indicators of interaction in neighbourhood or friendship networks within Fort McMurray had significant correlations ($p > 0.05$) with knowledge of officials. Local networks do not appear to diffuse awareness of officials' names. Of all the participation indicators, only the number of organizational memberships was moderately positively correlated with civic awareness ($r = 0.274$, $p < 0.001$), as was the index of voting ($r = 0.375$, $p < 0.001$). Participation of a more formal nature was associated with civic awareness, but indications of amount of activity in voluntary associations was not. Again, the network ties represented in this interaction do not appear to diffuse awareness of officials' names.

9.3 NEIGHBOURS

9.3.1 Knowing and Visiting

Micro-environments within Canadian cities vary a good deal both in housing types, and in characteristics of residents (Michelson 1977). These factors can be used to explain the development of neighbourhood interaction. In these terms, Fort McMurray offers an extreme example of urban life, because it has a highly mobile population, very rapid growth, and wide heterogeneity in terms of neighbourhoods, housing types, and housing tenures.

Does this result in a situation where nobody knows their neighbours as some writers suggest (Van Dyke and Loberg 1978:87)? Is the situation attributable to very rapid growth and high turnover in the community? These questions are difficult to answer, if only because "knowing" and "interacting" are difficult to measure in an absolute sense. However, if Fort McMurray exhibits higher levels of knowing and interacting with neighbours than does Edmonton, it is probably safe to assume that there have been few negative effects directly attributable to the rapid growth associated with oil sands development.

Few people knew many of their neighbours by name (Table 51). However, this low level of development of local neighbourhood ties was not peculiar to Fort McMurray. A similar survey in Edmonton (EAS 1979) found even fewer people knew a high proportion of their neighbours. Indeed, despite the numerous differences between the two cities, they had remarkably similar distributions for reported knowledge of neighbours by name. When integer scores of zero to seven were assigned to the ordinal response categories, the average scores for residents of Fort McMurray ($\bar{x} = 1.99$) were higher than average scores for the Edmonton sample ($\bar{x} = 1.87$). Differences between these means were not significant ($Z = 1.25$, $p > 0.05$). The direction of the difference does not suggest any negative impacts attributable to rapid development in Fort McMurray.

Table 51. Knowing and interacting with neighbours: Fort McMurray and Edmonton.

Neighbours known			Get together with neighbours		
Frequency	Edmonton (%)	Fort McMurray ^a (%)	Frequency	Edmonton (%)	Fort McMurray (%)
None	12	13	Never	22	21
Almost none	33	29	< 1/mo	27	21
< 0.5	30	32	1-3/mo	22	27
About 0.5	13	12	1-3/wk	21	28
Over 0.5	7	5	Daily	8	4
Almost all	4	7			
All	2	0			
Total	101	100	Total	101	100
$\bar{x}$	1.87	1.99	$\bar{x}$	1.64	1.73
S_x	1.34	1.46	S_x	1.25	1.19
N	440	430	N	440	430

^a Scale scores for Fort McMurray were collapsed from eight categories to the form used in the 1979 EAS. The response categories for Fort McMurray were designed to allow this comparison.

Similar results were obtained for "getting together with neighbours for a chat". Interaction within neighbourhood networks was low in both Edmonton ($\bar{x} = 1.64$) and in Fort McMurray ($\bar{x} = 1.73$). Both averages suggested scores just below one to three times per month. Again, interacting with neighbours was higher in Fort McMurray than it was in Edmonton, but differences were not significant ($Z = 1.09$, $p > 0.05$). If by a "sense of community" we mean knowing neighbours and interacting with them, it appears as though community networks are similar in both Edmonton and Fort McMurray.

9.3.2 Sub-Community, House Type, and Knowing Neighbours

The six areas within Fort McMurray (Figure 2) differ considerably in their age, housing mix, physical size, stability and social heterogeneity. Area differences within Fort McMurray provided important insights into patterns of stability, and perceptions regarding the quality of life (housing, services). It is therefore not surprising to find that areas differed significantly in the average proportion of neighbours known ($F = 4.49$; $p < 0.001$). Thickwood Heights ($N = 94$) had the highest scores ($\bar{x} = 2.52$) with residents of Waterways ($N = 16$) close behind ($\bar{x} = 2.25$). Lower Town ($N = 173$, $\bar{x} = 1.94$) and Beacon Hill ($N = 37$, $\bar{x} = 1.92$) exhibited somewhat lower proportions of neighbours known. Gregoire Park ($N = 52$) and Abasand ($N = 58$) had the lowest scores ($\bar{x} = 1.62$ and $\bar{x} = 1.57$, respectively). These differences accounted for about 5% of the variation in knowing neighbours.

Observed differences between areas within Fort McMurray may be in part a consequence of their different housing compositions. As expected (Michelson 1976; Fischer 1976), residents of single family housing reported higher proportions of neighbours known ($\bar{x} = 2.89$) than did residents in any other kinds of dwellings. Residents of apartments averaged 1.55, and those living in semi-detached or townhouse accommodation averaged 1.78. Mobile homes averaged 1.55. Differences in house type explained a large 15.5% of the variation in proportion of neighbours known

($F = 26.0$; $p < 0.001$). Lower residential densities appear to result in knowing more of your neighbours. Since higher densities mean that there are more neighbours to know, people might know the same number of neighbours by name and yet know a lower proportion of their neighbours. There may also be more stringent norms regarding privacy in areas that have high densities, and these areas may be more likely to have a higher proportion of rented dwellings. More importantly, perhaps, different kinds of housing have different levels of stability in terms of the length of time people have lived there. Assuming little mobility within small, local neighbourhood areas, differences in the proportion of neighbours known may in part reflect the length of time that residents have lived in the neighbourhood.

9.3.3 The Development of Neighbourhood Ties

High mobility has been perhaps the most prominent explanation for the low rate of interaction in local residential neighbourhoods (Fischer 1976; Fischer et al. 1979; Wellman and Leighton 1979; Wellman 1979). However, from this perspective it is difficult to understand the stronger neighbourhood ties in Fort McMurray than in Edmonton, since the latter has a far more stable population. Presumably, it takes time to get to know your neighbours, and knowing their names requires also interaction with them. Accordingly, the shorter the length of residence in a particular neighbourhood by both the respondent and his or her neighbours, the fewer neighbours known.

Without longitudinal data on individuals, individual change over time can only be studied indirectly. Again, the procedure used is the comparison of migration cohorts. However, instead of using length of residence in Fort McMurray to define the cohorts, length of residence in the dwelling is more appropriate. This assumes that there is little mobility within neighbourhood (not within area), as it equates stability in dwelling with stability in neighbourhood. Given the relatively high rate of

intra-urban mobility observed for Fort McMurray, it is important to use a definition of stability that localizes residence within the neighbourhood.

As expected, the longer residents had lived in their housing, the higher the proportion of their neighbours they claimed to know. Figure 18 illustrates these results separately for owners and renters. In the total sample who had just moved in within the last 4 mo ($N = 93$), average scores were 1.26. A score of one would equal "almost never" and two would equal "less than once a month". Those who had been in their dwellings between 4 and 6 mo ($N = 54$) claimed to know a higher proportion of their neighbours ($\bar{x} = 1.74$). This trend was reversed for the cohort who had lived in their homes between 6 mo and 1 year ($N = 83$). They knew fewer neighbours ($\bar{x} = 1.48$). It is unlikely that respondents would "forget" neighbours over so short a period of time. This suggests that less mobile respondents who do not move find themselves with new neighbours whom they do not know.

Knowing neighbours increased markedly to an average of 2.30 for the cohort ($N = 91$) who had lived in their dwellings 1 to 2 years. It continued to increase (to 2.75) for the 40 respondents who had lived in their neighbourhoods 2 to 3 years, and to 2.93 for those who had lived in the same place for more than 3 years. Differences in length of residence in the dwelling, and presumably in the neighbourhood, account for a substantial 16.4% of the variation in neighbours known (using a linear model $F = 85.1$, $p < 0.001$). A similar pattern was observed for interaction with neighbours, but length of residence in the neighbourhood accounts for only about 3% of the variation in neighbours known.

This trend is clear, even when owners and renters are considered separately (Figure 18). Renters exhibit consistently less knowledge of neighbours in all cohorts. It was noted above that residents of single detached dwellings showed a higher knowledge of their neighbours. Since residents of this type of

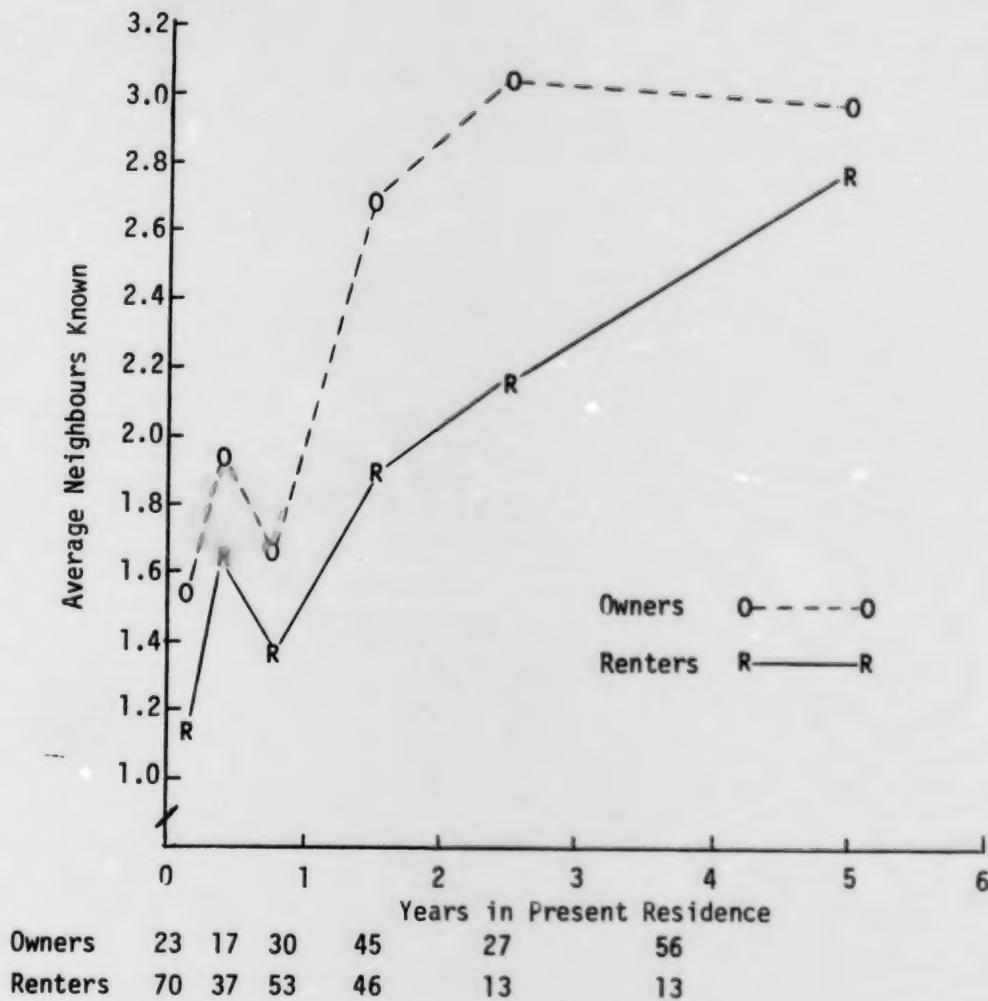


Figure 18. Knowing neighbours by housing tenure for residence cohorts. Knowing neighbours scored from 0 (none) to 7 (all). "Owners" includes lease-purchase tenures. Renters include "others". Sub-sample sizes for the cohort intervals (0.0-0.3, 0.3-0.5, 0.5-1.0, 1.0-2.0, 2.0-3.0, 3.0-21.0) appear below the horizontal axis; owners in the first row and renters in the second.

housing had also lived there longer, neighbours known were examined across residence cohorts within housing type (Table 52).

Single detached housing does have the highest neighbouring, no matter how long residents have lived in the dwellings (Table 52). Differences between housing types appear to be somewhat larger for cohorts with longer residence, but small sample sizes may make estimates unreliable. Those living in single dwellings, apartment, and mobile homes all show the pattern of initial increases in knowing neighbours followed by a drop, followed in turn by a sharp increase. The "dip" occurs one cohort later for mobile home dwellers and it is not nearly as severe.

Beyond the 1 to 2 year cohort, there are probably too few residents of townhouses or apartments (15 in total in both cohorts) to give reliable estimates. If scores are combined for all those in multiple family housing, their average (about 2.07) is similar to that for mobile home dwellers.

Cohort differences for those living in semi-detached and townhouses dwelling (other multiple, Table 52) show an interesting deviation from the general pattern. The proportion of neighbours known decreased slightly across the first three cohorts. Townhouse dwellers do not appear to get to know their neighbours quickly. If the drop in knowing neighbours observed for other house types is indeed a consequence of mobility on the part of neighbours, then they do not suffer this "loss" either.

Differences in the proportion of neighbours known between renters and owners (Figure 18), and between those who live in different kinds of housing (Table 52) appear to be independent of length of residence in the neighbourhood. Do they remain so when controls are introduced for residents' attitudes towards their neighbourhoods, and towards the making of friends? Do demographic and social differences in individual residents account, in part, for observed differences in neighbouring?

Table 52. Knowing neighbours^a by house type for residence cohorts.

Dwelling type	Years Resident in Dwelling				
	0-0.3	0.3-0.5	0.5-1.0	1.0-2.0	2.0-3.0
	Averages				
Single	1.62 (13)	2.57 (7)	1.67 (9)	2.81 (27)	3.29 (24)
Mobile home	0.83 (22)	1.33 (12)	1.67 (30)	1.53 (15)	2.20 (10)
Apartment	1.25 (32)	2.07 (15)	1.26 (19)	2.25 (12)	0.50 ^b (2)
Other multiple	1.48 (25)	1.45 (20)	1.36 (25)	2.24 (37)	2.00 (4)
					3.40 (42)
					2.06 (18)
					1.75 ^b (4)
					3.00 ^b (5)

^a Knowing neighbours scored from 0 (none) to 7 (all).

^b These estimates should be interpreted with caution because of small sample sizes.

9.3.4 Correlates of Knowing Neighbours

Those who were not in the labour force (a little over one half of the females in the sample) knew a significantly higher proportion of their neighbours than those who were employed ($\bar{x} = 2.21$ versus $\bar{x} = 1.88$). This difference was significant at the 0.05 level, but its magnitude is perhaps smaller than one would expect. For example, there was a somewhat larger difference ($p < 0.01$) between those households where someone worked for Syncrude or Suncor ($N = 159$, $\bar{x} = 2.36$) and all other household ($\bar{x} = 1.77$). The common neighbourhoods that seem to come with company housing, riding the bus together to work, sharing common recreational and other company- or union-sponsored activities, and other forms of interaction arising out of employment seemed to have a larger effect on knowing neighbours.

While sex differences were not significant, single respondents ($N = 106$) knew significantly fewer of their neighbours ($F = 6.81$, $p < 0.01$) than did married respondents ($N = 324$, $\bar{x} = 2.09$). Both age and household size were also significantly positively correlated with the proportion of neighbours known ($r = 0.154$, $p < 0.01$, and $r = 0.103$, $p < 0.05$, respectively). So too were household possessions ($r = 0.233$, $p < 0.001$), education ($r = 0.117$, $p < 0.05$) and total household income ($r = 0.117$, $p < 0.05$).

Those who know a higher proportion of their neighbours might be expected to report higher satisfaction with neighbourhood and more positive attitudes towards making friends. Sub-community differences, house type, and housing tenure were considered as potential correlates of knowing neighbours, as was the level of interaction (frequency of "getting together just for a chat"). Interaction with neighbours is presumably necessary to the development of widespread knowledge of neighbours' names.

Interaction with neighbours was moderately strongly correlated with the proportion of neighbours known ($r = 0.427$). Also, the longer respondents had lived in the neighbourhood, the higher the

proportion of their neighbours they knew ($r = 0.382$). Presumably, increases in housing stability would result in higher socializing within local neighbourhoods.

Those who lived in single detached reported knowing more neighbours ($r = 0.377$, $p < 0.001$). Despite moderately high zero-order effects ($r = 0.305$), housing tenure did not have significant effects when both length of residence and house type (single) were controlled. The observed positive effects of owning could be attributed to longer residence and a higher proportion of single detached dwellings among owners.

Thickwood Heights residents knew a higher proportion of their neighbours than did residents of other areas ($r = 0.197$). Differences between other areas were a function of different housing stability, the proportion of single family dwellings, and the attitudes of residents that lived in the area.

Employees of Suncor or Syncrude also knew more neighbours ($r = 0.193$) and these effects remained significant even when the variables discussed above were controlled. As noted above, this may reflect common residential areas as well as common work places. Despite the large size of the plants, there are many opportunities for those who work in these plants to know one another by name, particularly if they live in the same area and ride the bus to work together.

9.3.5 Summary

The longer respondents had lived in their homes and the greater their interaction with neighbours, the higher proportion of them they knew. Residents of single family dwellings knew a higher proportion of their neighbours, but ownership per se was not a significant factor when other effects were controlled. Demographic differences (age, sex, marital status) had little effect on neighbouring. Those households where someone worked for Syncrude or Suncor, the major oil company employers, also appeared to be better integrated into neighbourhood networks.

Evidence of negative impacts of rapid development on the level of interaction within local neighbourhood networks was not found. While the level of getting to know neighbours was low, it was not lower than that found in Edmonton. Given the low residential stability in the population, the level of knowing neighbours may indeed be relatively high (compared to Edmonton). Those who worked for the major oil company employers were better integrated into local neighbourhood networks, probably because those networks involve company subsidized housing, common transportation to work (bus), interaction at work, and activities organized by the company or union.

Similar results were found for the level of associational affiliation. If the community continued to develop a more stable populace (longer residence in the community and in the dwelling), networks would increase to provide a relatively high level of social support. Is this equally true of friendships? How quickly do people make friends in Fort McMurray? Is not having friends an acute part of the problem of not having roots in the community? (Van Dyke and Loberg 1978:97).

9.4 INTERACTION WITH FRIENDS

9.4.1 The Level of Interaction

Residents of Fort McMurray reported significantly higher interaction with friends than did residents of Edmonton in the 1979 EAS (Table 53, $p < 0.001$). In Fort McMurray, only 8% of the respondents reported never or almost never visiting friends. About 85% reported visiting friends at least several times a month. By contrast, in Edmonton 9% reported rarely visiting friends, and 46% reported visiting at least several times a month.

This difference may be attributable to the younger age of the Fort McMurray sample, or to the relative lack of alternative recreation and entertainment in Fort McMurray. Whatever the reason, social networks based on friends showed no signs of the relatively

Table 53. Interaction with friends: Edmonton and Fort McMurray.

Frequency of Interaction	Edmonton (%)	Fort McMurray (%)
Rarely or Never	9	4
Less than once per mo	46	12
1-3 times per mo	32	50
1-3 times per wk	12	31
Daily	2	4
N	438	429
$\bar{x}$	1.54	2.19
S_x	0.88	0.82

low participation predicted as a possible negative impact of rapid growth. In this respect, results for friendship networks parallel those for formal organizational ties and local neighbourhood networks.

9.4.2 The Development of Friendship Networks

People appeared to be quick to make friends after they arrived (Figure 19). The level of interaction with friends was higher for those who had been in Fort McMurray 6 to 12 mo ($\bar{x} = 4.26$) than it was for those who had been in Fort McMurray less than 6 mo ($\bar{x} = 3.56$). Over the next three cohorts (through 2.5 to 4 years residence in Fort McMurray), interaction remained relatively constant. This covers those who moved to Fort McMurray during the period when Syncrude was being built. The level of interaction was the lowest for those ($N = 47$) who came 4 to 7 years before the survey ($\bar{x} = 3.46$).

Part of the reason for this lower interaction with friends may lie in their mobility. People who stay might find that their friends have left. This may be particularly associated with the end of the construction phase for Syncrude. The level of interaction for the cohort that had been in Fort McMurray over 7 years was similar to that for the cohorts who had stayed between 6 mo and 4 years ($\bar{x} = 4.02$).

If the development of friendship networks over time can be inferred from this pattern, there would seem to be some validity in the assertion that people made friends easily (Van Dyke and Loberg 1978). This is confirmed in the respondent's own attitudes towards the ease of making friends. Only 13% disagreed with the statement that "it's easy to make friends in this community." On the other hand, 56% of the respondents also felt that "people here move so often it is hard to keep friends." Only 23% disagreed with this attitude statement. Indeed, many respondents felt that life-long friendships were something that was generally "lacking in the world today". Only one-quarter of those surveyed disagreed with this

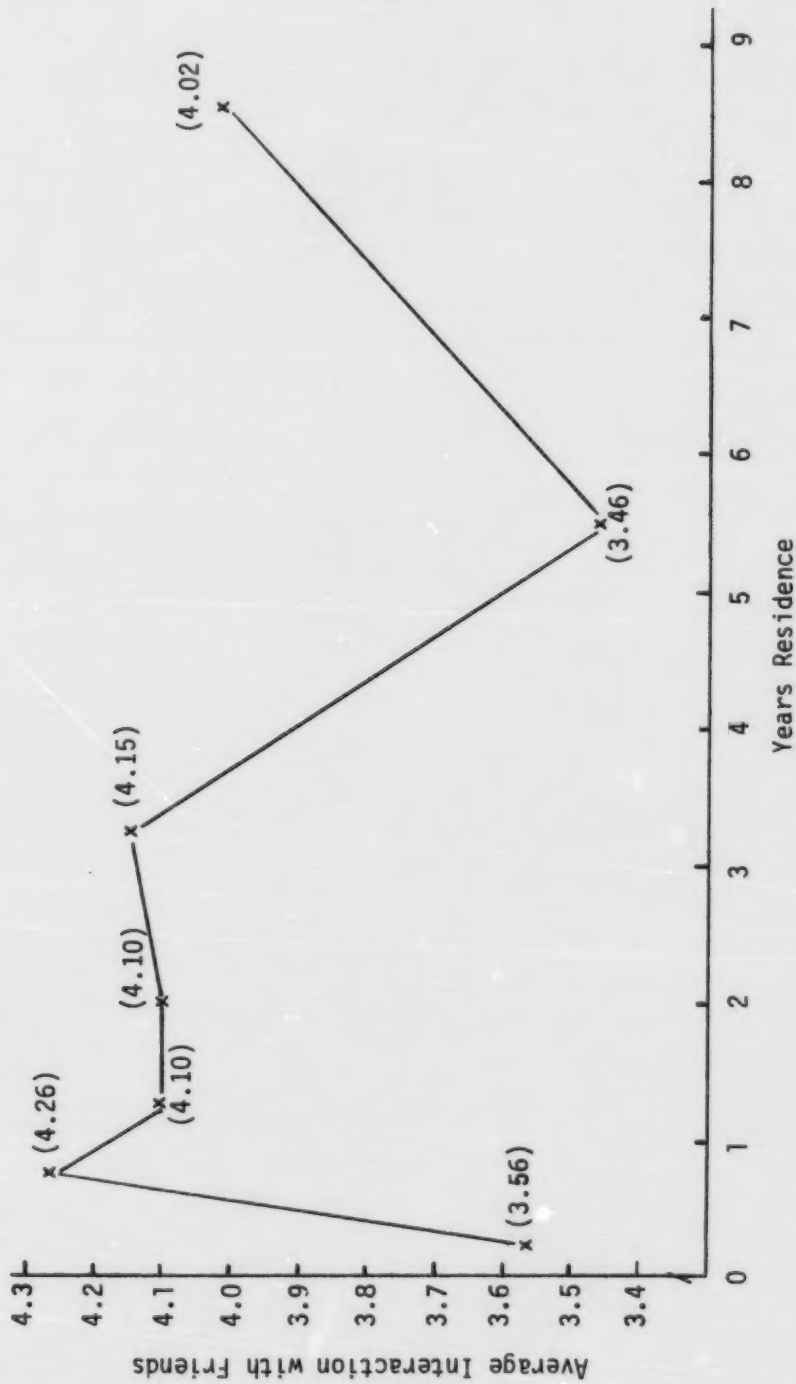


Figure 19. Interaction with friends by years resident in Fort McMurray. Interaction with friends scored from 0 (never) to 7 (daily). Brackets contain averages for the residence cohorts.

statement, and 62% agreed with it. In brief, most people have a relatively easy time making friends, but these relationships may be difficult to keep.

9.4.3 Differences in Interaction With Friends

There were no significant differences in interactions with friends between different areas of town or between different housing types. Nor were there significant differences between the employed and those not in the labour force (mostly housewives), or between those who lived in a household where someone worked for one of the major oil companies and all other households. Indeed, there appeared to be no status barriers to interaction with friends. People with different incomes, levels of living, and education did not report different interaction levels, and renters actually reported higher interaction with friends than did owners. However, this difference was not significant when age was controlled (first order partial $r = 0.056$, $F = 1.2$, $p > 0.05$).

The largest differences in interaction in friendship networks were those involving life cycle factors. Age was negatively correlated with interaction levels ($r = -0.260$, $F = 26.6$, $p < 0.001$). Respondents below 25 years of age had an average score of 4.56 (Figure 20). Young people may rely heavily on friends for socializing and for social support. Visiting friends was lower for each successive age cohort, with those over 44 years of age averaging 2.95, a little less than "once a month". Older respondents may be more family or career oriented.

Single respondents also reported that they visited their friends more often ($\bar{x} = 4.40$) than married respondents ($\bar{x} = 3.84$). This difference was significant at the 0.001 level. Apparently, as respondents grew older and became married, the focus of their interaction was more likely to be their family and perhaps their career. While this may be part of the "normal" life cycle, reduced visiting of friends across age cohorts may also reflect something of the

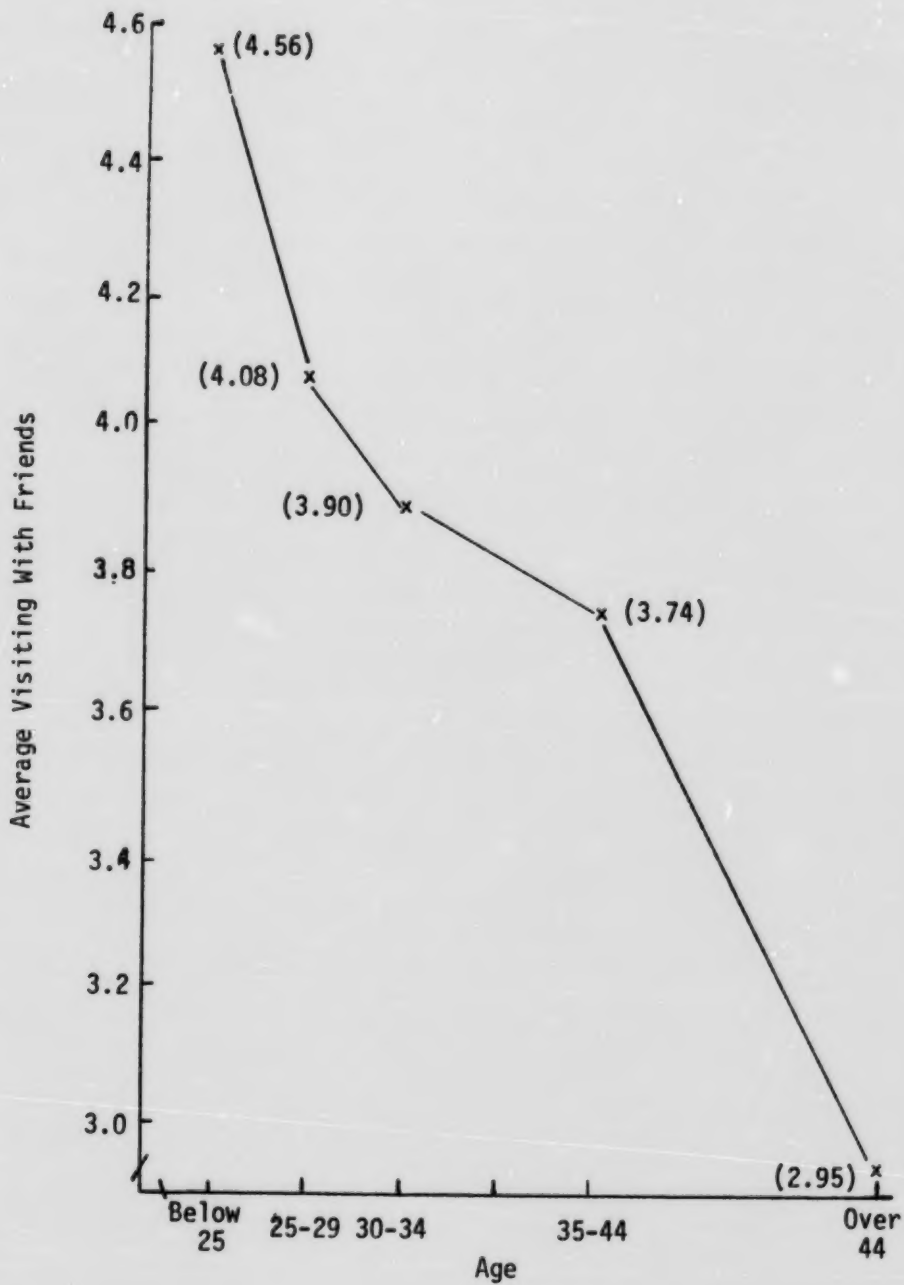


Figure 20. Interaction with friends by age. Brackets contain averages for age cohorts. Interaction with friends scored from 0 (never) to 7 (daily).

problem of high mobility. Part of the reason for lower interaction in friendship networks may involve friends leaving Fort McMurray.

9.4.4 Contacts with Friends Outside Fort McMurray

Besides frequently visiting with friends in Fort McMurray, respondents also indicated fairly frequent visits, calls and letters to friends outside Fort McMurray. About 40% indicated that they contacted friends several times a month, and an additional 17% reported even more frequent contact. The overall average length of contact with friends outside Fort McMurray was 3.43 (scored as in Figures 19 and 20), significantly lower than visiting friends inside Fort McMurray ($\bar{x} = 3.97$, $p < 0.001$).

Contact with friends outside Fort McMurray decreased as length of stay in the community increased ($r = -0.151$, $p < 0.01$). Although differences were not large, contact averaged 3.72 for those who had lived in Fort McMurray less than 6 mo and was lower for each successive cohort until those who had been residents for 4 to 7 years, who averaged 3.09. Contact with friends outside Fort McMurray increased again to 3.30 for those who had come before June 1972. For most of the residents, the longer they lived in the community, the less frequent their non-community contact became.

9.5 SUMMARY

Despite the high mobility associated with rapid growth, participation in social networks shows no particular signs of negative impact. Residents of Fort McMurray are not socially isolated. They do not lack ties to neighbours and friends, and are just as much a community of "joiners" as the rest of the Canadian population. Nor do they particularly avoid the kind of community participation that provides the social support necessary for urban living. With formal associations as well as with neighbours and friends, residents show a pattern of integration within multiple networks that appears to be relatively typical of urban residents generally.

Indeed, interaction in friendship networks is higher in Fort McMurray than in Edmonton, perhaps because the population of Fort McMurray has a high proportion of young people. The same reason may account for the higher levels of satisfaction with friendships reported by the Fort McMurray sample. They averaged 82.8 points on a scale from zero to 100, while Edmonton residents averaged 78.5 (a difference significant at the 0.01 level).

Social participation of all kinds appeared to increase rapidly after arrival in Fort McMurray. Cohort comparisons suggest that people's affiliation with associations increased substantially over the first 3 or 4 years. Civic awareness also was markedly higher in cohorts with longer residence in the community. People who had lived longer in their dwelling were better integrated into neighbourhood networks despite "setbacks" that probably involved neighbours moving away. These lower levels of participation for some cohorts were the only signs of negative impact.

The large proportion of recent arrivals, the necessary lag in getting adjusted to the community, and later problems generated by turnover, all contribute to lower integration into the community. Given the severity of these problems in Fort McMurray, the overall level of network connection is remarkably high. As turnover decreases and a larger proportion of the community become long term residents, social participation may increase further.

Households where someone was employed by Syncrude or Suncor were not better integrated into either organizational life or friendship networks. However, respondents in such households did know more of their neighbours, even if they did not interact with them more often. This is perhaps a result of subsidized housing, common transportation (bus) to work, and the effects of working in large plants. For those who work for Suncor or Syncrude, opportunities to get to know neighbours extend beyond the local neighbourhood itself.

Other differences in social participation within Fort McMurray were primarily those common to any population. Differences peculiar to Fort McMurray were those between areas of town. Residents of Waterways showed systematically lower civic awareness than residents of other areas and residents of Thickwood Heights knew more of their neighbours. The reasons for these differences are difficult to find. They are not the result of the demographic composition of the areas, their housing mix, or any of the other characteristics which were identified. Further research would be necessary to pinpoint the source of these differences.

The principal remaining form of social participation of importance to human adjustment relates to interaction within family and kinship networks. Indeed, primary relationships with kin are probably the most important of all network connections in providing social support (Larson 1979; Wellman 1979). How do families cope with the rapid growth and social change associated with oil sands development?

10. FAMILY LIFE IN FORT McMURRAY

10.1 INTRODUCTION

Because so much of an individual's growth and development occurs within the framework of a family unit, a study of human adjustment in Fort McMurray must include an evaluation of the quality of family life (Larson 1979). While formal and informal community participation are also important for adjustment, major psychological needs are frequently better met within the family than within other less "primary" groups. Furthermore, the family can serve as a buffer in disruptive social settings. In a recent study of marital status, life strains, and depression, Pearlin and Johnson (1977:714) conclude that "Marriage does not prevent economic and social problems from invading life, but it apparently can help people fend off the psychological assaults that such problems otherwise create".

Given the reputation of resource development communities as notoriously unstable (Lucas 1971), it is important to consider how effectively families in these communities respond to the pressures placed on them. The typical assessment of family life in single-industry towns is rather negative. Riffell (1975:61), for example, writes that "The boom and bust character of resource towns aside, probably the most important reason leading an individual worker to leave a resource town is because his family is not happy with life in town".

However, as Larson (1979:126) notes in his review of the relevant literature, there has been little systematic research on the effects of the resource development process on the family life of its participants. This critique is particularly applicable to the literature detailing social problems in Fort McMurray. Commentators on the Fort McMurray social milieu have had to rely on two, perhaps questionable, sources of information. Opinions about social problems have been based on indirect data sources such as records of liquor sales, illegitimate births, and mental illness referrals

(Hobart et al. 1979; Larson 1979). The second source of information has been the opinions of those in the "helping professions" (e.g. police and probation officers, social workers). While the members of these professions would be more aware of family-related problems than would be the average resident of the community, it is also possible that they might over-estimate the severity of the problems.

Whatever the origin of their information, reports about life in Fort McMurray have detailed a great deal of marital discord and family breakdown (Van Dyke 1975; Graham, Brawn & Associates 1975; Hobart et al. 1979). Young mothers raising children alone while husbands work 12 h shifts, supportive relatives who are far away, over-worked husbands who are not sympathetic to the plight of their wives, loneliness, depression, alcohol-related problems, marital infidelity, debt and other family-focused social problems are frequently portrayed. Faced with community descriptions such as these, writers are forced to conclude, as do Hobart et al. (1979:111), that "although precise quantification of the situation is not possible, there is no doubt that family organization and stability has suffered among those moving to Fort McMurray since 1973 ...". In this section, an attempt will be made to incorporate somewhat more "precise quantification" in several systematic tests of assumptions about family life in resource development towns.

As already noted, evaluations of family life in Fort McMurray usually contain references to widespread marital infidelity and family breakdown. This sample of respondents also appeared to believe that these problems were endemic. Almost three-quarters (72%) agreed that "Family breakdown is common around here." and over one half (55%) agreed with the statement "Marital infidelity is common around here". These are, obviously, perceptions of problems rather than accurate measures of them. However, these results do demonstrate that it is not simply those in the "helping professions" who are convinced of the precariousness of family life in Fort McMurray.

Rather than focusing further on these perceptions of family problems, a descriptive profile of families in Fort McMurray follows. Five hypotheses about family life are then addressed: (1) those who were less involved in the original decision to move to the community are now less satisfied with family life and with the community; (2) satisfaction with family life and the community increases with length of residence in the community; (3) the absence of kinship networks leads to reduced satisfaction with the family and with the community; (4) raising children in Fort McMurray is problematic for parents; and (5) the quality of interpersonal relationships and the degree of role flexibility within the marriage are positively associated with family-life and community satisfaction.

10.2 FAMILY STRUCTURE IN FORT McMURRAY

10.2.1 Marital Status

It is usually assumed that resource towns, and Fort McMurray in particular, contain a high proportion of unattached adults. Comparing the 1979 survey results to 1976 Canadian census returns (Table 54) confirms this assumption. About 18% of the respondents in the survey reported their marital status as "single", compared to 11% of the household heads in the total Canadian population. However, the proportion of single adults in the Fort McMurray community has been declining since 1961, when the Canadian census reported 29%. In 1971, 22% of the household heads were single. What these census year results do not portray, unfortunately, are the substantial increases in "proportion single" which must have taken place during the two construction booms experienced by the community. A large proportion of the labourers employed during those times were single.

Edmonton has also been experiencing oil-inspired industrial growth and development, but it was generally thought that the effects in Fort McMurray have been more pronounced. Considering only the

Table 54. Marital status of adult population: Fort McMurray, Edmonton, and Canada.

Marital status	Fort McMurray			Edmonton ^b	Canada ^c
	1961 ^a (%)	1971 ^a (%)	1979 (%)	1979 (%)	1976 (%)
Single	29.4	22.0	17.7	21.4	10.9
Married	65.3	75.3	76.9 [66.7 8.6 1.6	66.1 [58.0 3.6 4.5	75.6
Common law					
Separated					
Divorced	0.6	1.2	4.0	5.9	3.1
Widowed	<u>4.7</u>	<u>1.5</u>	<u>1.4</u>	<u>6.6</u>	<u>10.4</u>
Total	100.0	100.0	100.0	100.0	100.0

^a Source: Larson (1979:98) - % single based on individuals over 15 years of age.

^b Source: EAS 1979: Population Research Laboratory, Department of Sociology, University of Alberta.

^c Source: Statistics Canada (1978:163) - Marital status of household head.

marital status of residents of the two communities, the opposite appears to be true. 1979 EAS results show 21% of the respondents in that survey as single and only 66% as married/common law or separated (Table 54). Fort McMurray, in 1979, is closer to the national picture (18% single and 77% married/common law or separated) than is Edmonton.

Twelve percent of the currently married/common law respondents reported an earlier marriage. The average length of current marriage/common law union was 9.46 years ($S = 7.99$). Having identified the proportion of the 1979 survey sample who reported their marital status as "living common law" (8.6%), there is no further utility in distinguishing this group from those who are legally married. In the remainder of this section, unless otherwise noted, both groups will simply be referenced as "married". This distinction emphasizes living arrangements rather than legal distinctions, since the separated are grouped with the single.

10.2.2 Family Size

The composition of Fort McMurray households differs from typical provincial and national households. Average household size in Fort McMurray in 1979, as estimated by this survey, was 3.48 people per household (Table 55). The 1979 Municipal Census of Fort McMurray reported that average household size had decreased from 3.6 in 1966 and 3.7 in 1977, to 3.4 in 1978 and 3.3 in 1979. Both the provincial and national averages (from the 1976 census) were 3.10. This difference is primarily a product of the larger number of children resident in Fort McMurray households (1.32 per household) than in average 1976 Albertan households (1.07) and in average 1976 Canadian households (0.98). The larger number of children per household is, in turn, a function of the relative youth and the high marriage rate of the Fort McMurray population (Section 3). Younger couples are more likely to have more of their children still living at home. This issue is analyzed in more detail in Section 10.2.3 below.

Table 55. Household size, children in household, live-born children, and planned family size.

Sample	Family Characteristics ^a				N
	Household size	No. of children in household	Total live-born children	Total no. children planned	
Total sample	3.48	1.32	--	--	430
Married	3.60	1.60	2.12	2.62	324
Married; both employed	3.46	1.46	1.83	2.50	122

^a Averages

Currently married respondents ($N = 324$) reported an average of 2.12 live-born children, and an average of 1.60 currently living in the household (Table 55). When asked for the total number of children they planned to have, this group reported an average of 2.62. However, for the majority of those married, with children, child-bearing was considered completed. Of this group, 81% stated that they did not intend to have any more children.

There were fewer children resident in those households where both spouses were currently employed ($\bar{x} = 1.46$). Respondents in these dual-career families reported fewer live-born children ($\bar{x} = 1.83$). They also reported planning to have fewer children ($\bar{x} = 2.50$) than did the total group of married respondents ($\bar{x} = 2.62$). This probably indicates some postponement of child-rearing, a typical finding for dual-career families in the general population.

10.2.3 Fertility Comparisons

Is fertility behaviour different for people in a boom-town such as Fort McMurray or is the relative youth of the population the reason for the high proportion of children per household? It is commonly argued by demographers that the trend in developed countries is towards a maximization of general well-being through a reduction in family size (Vlassoff and Gartrell 1980). Because many people move to Fort McMurray for economic or job related reasons (Matthiasson 1970; Larson 1979), lower fertility than in the larger Canadian population might be expected. It could be argued that such trends might be reinforced by a lack of services, and the reputation of boom-towns as a poor place to raise a family (Larson 1979). Also, the low stability of the population might tend to depress fertility, at least in the short-run.

For comparative purposes, only the 227 once-married couples where the wife is under 46 years of age are included in the following analysis. Fertility in Fort McMurray appears to be stable, with these couples expecting an average completed family size of 2.5 children and having an average of two children at the

time of the survey (Table 56). Both these fertility indicators increase smoothly from younger to older categories. Fertility drops dramatically in younger cohorts, and judging from expected family sizes, fertility will remain low.

Contrary to expectations, age-specific fertility in Fort McMurray is surprisingly similar to fertility in other parts of Canada (Table 56). For women over the age of 30, fertility is slightly lower in Fort McMurray than it was in Ottawa or in Canada as a whole but it was slightly higher for those over 35 than similar figures for Toronto. While the overall average family size is somewhat smaller in Fort McMurray than in other areas, this is probably due to the younger average age of the sample. Also, fertility has continued to decline since the comparison data were collected (1968 to 1973); 1979 rates for those places would probably be closer to those for Fort McMurray. Comparisons from the 1976 Census of Canada confirm this speculation. Looking at younger cohorts (because data are available only for living, resident children), parity (number of children) for all of Canada was 0.7 for the age group 24 and under, and 1.7 for women age 25 to 34. For Alberta, women 24 and under had an average parity of 0.7, and those 25 to 34 had an average of 1.9. For Fort McMurray, the corresponding figures were 0.8 and 1.9.

In essence, fertility in Fort McMurray appeared to be nearly identical to that in Alberta and the rest of Canada. There is no indication that living in a boom-town decreases fertility.

10.2.4 Labour Force Participation and Housing

Of the 324 married respondents, 38% reported that they and their spouse were both currently employed. In 1961, 14% of Fort McMurray's married women were active in the labour force, and in 1971 36% were employed outside of the home (Larson 1979:100). The proportion of married women in the labour force has not risen appreciably since 1971. However, as Larson (1979) notes, it remains

Table 56. Fertility in Fort McMurray and other parts of Canada^a by age group.

Age Group	Fort McMurray 1979		Toronto 1968	Ottawa 1973	Canada 1971
	Actual	Expected	Actual	Actual	Actual
Average parity ^b					
Under 25	0.8 ^c	2.3	1.0	0.9	0.9
25 - 29	1.7	2.4	1.5	1.8	1.7
30 - 34	2.2	2.4	2.5	2.7	2.6
35 - 39	2.9	2.9	2.7	3.2	3.2
40+	3.2	3.3	2.7	3.3	3.3
Total	2.0	2.5	2.3	2.5	2.3

^a Sources: Toronto: Balakrishnan et al. (1975:23).
Ottawa: Pool (1975:30).
Canada: Collishaw (1976:42)

^b Parity is defined as the number of live-born children.

^c Sub-sample sizes are: under 25 (37), 25-29 (74), 30-34 (62), 35-39 (29), 40+ (25).

high enough to question the assumption that married women have particularly great difficulty finding employment in all resource development communities (Riffel 1975; Van Dyke 1975).

Housing supply and quality in Fort McMurray have been discussed in detail in Section 4. A brief examination of the availability of single-family housing for married couples is presented here. While it is generally assumed that families prefer single dwellings, the limited availability and cost of this form of housing in Fort McMurray makes it impossible for all to obtain it. Only 29% of all respondents in this survey were living in single-family dwellings, compared to 58% of all respondents in the 1979 EAS.

For single respondents, the major difference between Fort McMurray and Edmonton is the lack of mobile homes and the higher proportion of single detached dwellings in the latter (Figure 21). If these two housing types are added together, the housing mix for single residents is virtually identical in the two communities. This is not the case for the married. One-third of the Fort McMurray couples and two-thirds of the Edmonton couples had managed to obtain single-family dwellings (Figure 21). In Fort McMurray, town houses and duplex/triplex units (30%) appear to be a family's major alternative to single-family housing, followed by mobile homes (23%).

10.3 THE QUALITY OF FAMILY LIFE IN FORT McMURRAY

10.3.1 Evaluating Family Life

When asked to evaluate their "family life", most sample members responded very positively. Responses to the seven-point "very dissatisfied (1) ... (7) very satisfied" scale were translated into a scale ranging from 0 to 100. Average satisfaction with family life, using this scale, was 84.3. Married respondents (including common law) reported an average of 87.5, compared to single respondents' average score of 79.3. This difference was

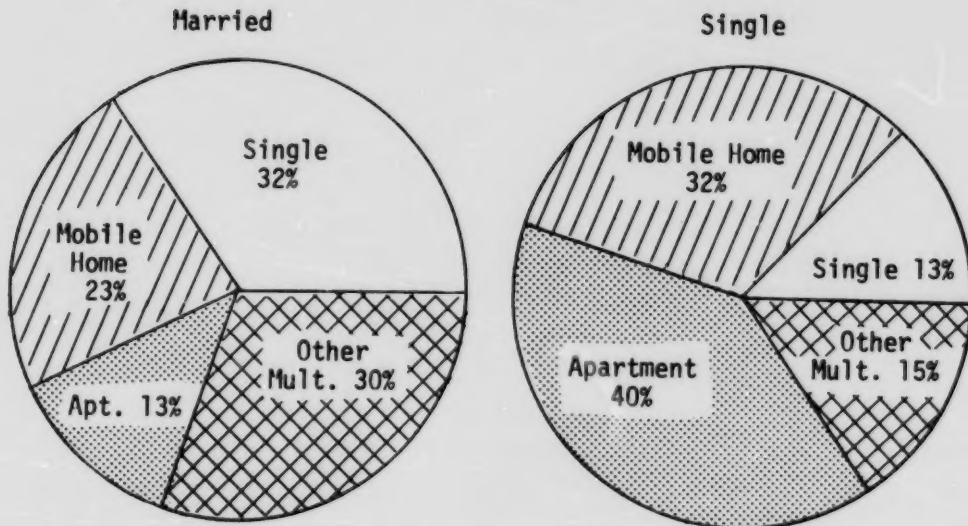
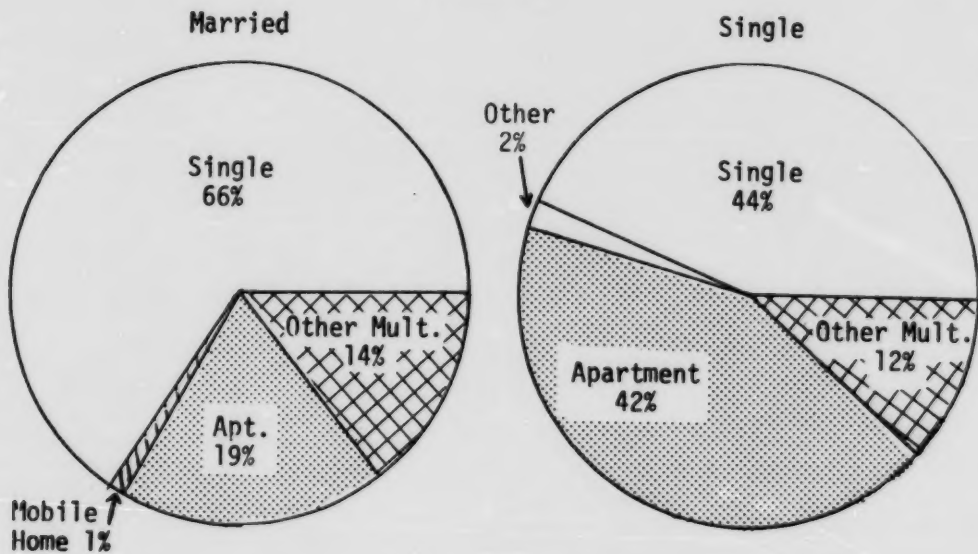
Fort McMurrayEdmonton

Figure 21. House type by marital status: Fort McMurray and Edmonton. Married includes common-law; single includes all others. Edmonton data from the 1979 EAS: Population Research Laboratory, Department of Sociology, University of Alberta.

significant at the 0.001 level, but explained only 3.2% of the variance in family satisfaction. Of the 324 married respondents, only five reported that they were dissatisfied with their family life (scores below 50), and a further 12 chose the neutral response category that gave them a score of exactly 50. All 308 of the remaining married respondents reported that they were satisfied.

The 1979 EAS included the same question in its interview schedule. The 269 respondents in that sample who were married or living common law had an average family satisfaction score of 85.7. This is not significantly different (at the 0.05 level) from the family satisfaction scores of couples in Fort McMurray. In other words, Fort McMurray couples are no more or less satisfied with their family life than are Edmonton couples. On the basis of this one self-reported indicator, the more rapid growth and development of Fort McMurray do not appear to have had adverse effects on perceptions of satisfaction with family life.

Asked if they agreed that Fort McMurray was "the kind of place where you could establish a permanent home", the 324 married respondents had a much lower average score of 59.8. About 56% agreed with the statement, 13% chose the neutral point on the scale (a score of 50), and 31% disagreed. This roughly corresponds to the earlier finding that about 60% of the sample intended to stay 5 years or more in Fort McMurray (Section 3).

The interesting finding here is that almost all respondents rated their family life as satisfying, but less than 60% considered the community a good place to establish a permanent home. In fact, there is not even a systematic pattern whereby those who are most satisfied with their family life are also more positive in their evaluation of the community. The correlation between the two items is small and non-significant ($r = 0.04$, $p < 0.05$). Satisfaction with family life is not dependent on the perception of the community as a place to establish a permanent home.

As noted above, 72% of the sample believe that family breakdown is common in Fort McMurray, and 55% believe that marital infidelity is common. This perhaps explains attitudes towards

settling permanently in the community. Whatever the case, it is clear that respondents are capable of evaluating independently their family life and the quality of the community in terms of family life. Both these two indicators are used separately in the analysis which follows.

10.3.2 Deciding to Move to Fort McMurray

The employment available in Fort McMurray has, no doubt, been the major factor which influenced current residents' decisions to move. Most often, this was meant that families moved because the husband had a job already arranged in the community or because he expected to find one easily. Considering the total sample of respondents, 68% of the men reported that they had come to Fort McMurray with a job already arranged. Only 13% of the female respondents reported that they had moved with a job assured (Section 6). Because wives' feelings about moving may have been of little importance in making the decision to move, women may be less satisfied with life in the community and, consequently, with their family life (Larson 1979:32).

After analyzing the responses of wives in families that had moved recently, Jones (1973) reported that, in about 60% of the families, the decision to move had been made jointly. When wives had been involved in planning the move, they were more likely to be satisfied with the move. Having made an exploratory visit to the community also led to increased satisfaction. Although this research did not centre on moves to resource towns, it can still be useful in helping to frame our hypotheses linking the circumstances surrounding moving with family and community satisfaction. Exploratory visits and joint decision-making would both be expected to result in increased family and community satisfaction. This relationship should be found for both sexes, but would be expected to be stronger for women.

Of the 324 currently married respondents 84% were married to their present spouse when they first moved to Fort McMurray. In this sub-sample, 53% of the male respondents had come

to see Fort McMurray before they actually moved and 55% of the female respondents reported that the husbands had made an exploratory visit. Only 42% of the women in this group had made an exploratory visit and only 39% of the men stated that their wives had been able to see the town prior to moving.

Responses to a question about decision-making prior to the move show that 63% of the 272 respondents reported a joint decision. This matches very closely Jones' (1973) figure of approximately 60%. About 22% of these Fort McMurray residents stated that one of the marital partners had made the decision to move after consulting with the other, while 15% answered that the decision to move had been made by one partner independent of the other.

The direction of most of the relationships displayed in Table 57 is consistent with the hypotheses presented above. For both men and women, joint decision-making regarding the original move to Fort McMurray is associated with higher satisfaction with family life and with a more positive evaluation of the community. Having made an exploratory visit and having had one's spouse make an exploratory visit are linked with higher family-life satisfaction, and with greater agreement that Fort McMurray is the kind of place to establish a permanent home. Again, these relationships are in accord with those hypothesized, but none of these differences are statistically significant ($p > 0.05$) when sex of respondent is controlled.

Respondents who had lived in other resource towns, like those who made exploratory visits, might be expected to evaluate the community more positively. Presumably, they would know what to expect in a town such as this and would, therefore, adjust more quickly. A test of this hypothesis (Table 57) fails to reject the null hypothesis. Women with experience in other resource towns do rate their family life and the community more positively, but the differences between the means are not significant. For men, the direction of relationship is reversed. Again the differences are not statistically significant.

Table 57. Circumstances surrounding moving and satisfaction with family life and the community by sex.

Sex of respondent	Satisfaction with family life	Place to establish permanent home
Male respondents	<u>Averages out of 100</u>	
Made exploratory visit:		
Yes (59) ^a	85.3	67.3
No (53)	89.0	57.7
Spouse made visit:		
Yes (41)	89.0	70.7
No (66)	85.3	58.0
Decision to move made:		
By one person (18)	85.2	57.8
By one after consulting other (21)	82.7	55.5
Jointly (70)	88.8	66.2
Lived in other resource communities:		
Yes (36)	86.5	60.5
No (76)	87.3	64.0
Female respondents		
Made exploratory visit:		
Yes (67)	89.2	58.8
No (92)	87.8	55.7
Spouse made visit:		
Yes (87)	88.7	58.7
No (67)	89.0	53.8
Decision to move made:		
By one person (22)	72.1	53.8
By one after consulting other (38)	88.7	53.5
Jointly (97)	89.3	58.7
Lived in other resource communities:		
Yes (40)	90.0	65.0
No (120)	88.0	54.7

^a Sub-sample sizes are given in brackets.

In brief, although analyses of these survey results identify weak relationships between the variables specified, tests of significance require the rejection of hypotheses. There is not convincing evidence that: (1) making exploratory visits to the community prior to moving; (2) having lived in other similar communities; or (3) joint decision-making in regard to the move translate into greater satisfaction with family life, or with the community as a place to establish a permanent home.

10.3.3 Cohort Comparisons

As already noted, attitudes towards Fort McMurray as a place to establish a permanent home were considerably less positive than subjective evaluations of satisfaction with family life. Since these two assessments were not correlated (Section 10.3.1), it was concluded that subjective assessments of the community did not influence reported satisfaction with family life. Neither is the reverse the case; satisfaction with family life does not seem to have any effect on attitudes towards Fort McMurray as a place to make a permanent home.

A second way to look at this possible connection between community and family is to compare attitudes across migration cohorts. If marital satisfaction is lower for cohorts who have lived in Fort McMurray a longer time, this may indicate a negative impact of living in the community. Similarly, if those more experienced with the community see it less favourably as a place to establish a permanent home, this too may indicate a negative impact.

In all migration cohorts, married respondents rate their family life in Fort McMurray as more satisfying than do single respondents (Figure 22). Among the married, there was very little difference across cohorts in family satisfaction. An initial small increase between the first ($n = 39$) and second cohorts ($n = 40$) is followed by a small decrease over the next two cohorts ($n = 36$ and $n = 70$, respectively). For the married who had lived in

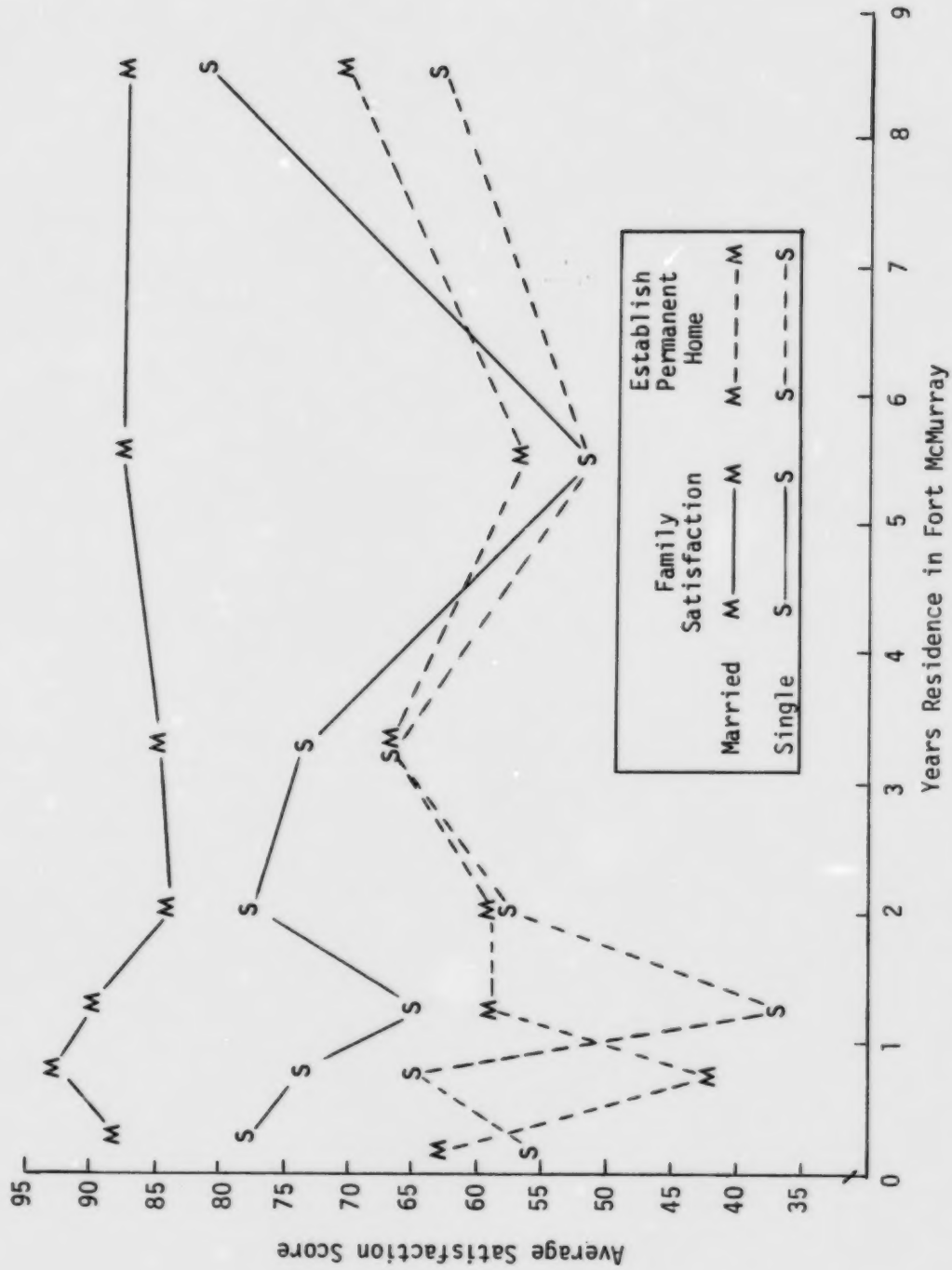


Figure 22. Satisfaction with family and community: migration cohort comparisons by marital status.

Fort McMurray over 1.5 to 2.5 years ($n = 52, 39, \text{ and } 40$, respectively), family satisfaction was virtually constant by length of stay.

Among those living alone, family satisfaction decreased across the first three migration cohorts ($n = 23, 15, \text{ and } 17$, respectively). Single respondents who had lived in Fort McMurray 1.5 to 2.5 years ($n = 10$) had similar scores to those who had just arrived. While scores fell rather sharply for the 4 to 7 year cohort, its small size ($n = 7$) makes reliable conclusions difficult. Furthermore, the relatively high satisfaction ($\bar{x} = 82$) reported by the 10 single respondents who had lived in the community over 7 years casts doubt of any inference of long term negative effects.

Attitudes towards making Fort McMurray a permanent home vary widely among short term residents. As single residents settle in, they appear to initially gain a more positive attitude towards the community. However, the third cohort, who came between June 1977 and June 1978, have a very poor opinion of the community as a place to establish a permanent home. On the other hand, the married show a sharp drop from the first to the second cohorts, before there is an increase to approximately the levels for all longer term residents.

The initial impact of experience in the community on attitudes toward the community appears to be very different for the married and the single. It leads to the only situation where the single have more favourable attitudes than the married, a difference that is significant at the 0.05 level. Also, this "inversion" of the overall pattern of greater satisfaction for the married parallels a divergence between the married and the single on family satisfaction. In any case, these fluctuations appear to be short term. There is virtually no difference between the married and the single or between migration cohorts for those who have lived in Fort McMurray for more than 1 year.

10.3.4 Contact with Kin

The argument that the family can mediate between the individual and a sometimes hostile social environment has already been introduced at the beginning of this section. An extension of this thesis is that a larger kinship network can provide further support (in various forms) for the individual. Families that move to relatively isolated resource development communities are frequently cut off from relatives. It has been argued that separation from the support provided by an extended family leads to family dissatisfaction and breakdown (Van Dyke 1975:74; Hobart et al. 1979:110).

Once again, problems are encountered when the opinions of those in the helping professions are accepted as facts. Van Dyke (1975) presented this hypothesis but, after interviewing a small sample of more typical community residents, Van Dyke and Loberg (1978:79) concluded:

In all the data from Fort McMurray, only professional helpers such as counsellors, social service workers, etc. offered the viewpoint that a resource community like Fort McMurray causes social dislocation. Moving away from relatives and friends is a traumatic experience and the individual finds himself in a new environment without support...almost no information from informants suggests this explanation. The evidence seems to point in the opposite direction, namely, that a significant proportion came to Fort McMurray to get away from what they considered to be oppressive relationships with kin.

Larson (1979:31), after reviewing the more general literature on geographic mobility and kinship ties, concludes that the evidence is too contradictory to support the hypothesis. While Van Dyke and Loberg's (1978) alternative hypothesis (moving to get away from relatives) cannot be tested here, the question of whether more contact with relatives, both within and outside of Fort McMurray, leads to greater family and community satisfaction can be considered. The effects which length of time in the community has on these relationships can also be inspected. In this analysis, only the married in the sample are included.

Approximately one-half (57%) of the married respondents never visited with relatives in Fort McMurray. At the other end of the continuum, 32% reported visits with relatives more than once a month. In addition, 89% reported that they contacted kin (visit, letter, phone) outside of the community at least once a month. Clearly, the majority of the married sub-sample's kinship contacts are outside the community. It is difficult to know to what extent the lower contact within Fort McMurray is governed by opportunity (no relatives available), since relatives can come to visit. Still, the amount of interaction that does take place brings into question assessments that see Fort McMurray's residents as cut off from kinship ties.

For both married and single residents of Fort McMurray, the longer they had lived in the community, the more contact with kin within the town they reported ($r = 0.130$, $p < 0.01$). The longer they had stayed, the less contact they reported with relatives outside the community ($r = -0.085$, $p < 0.05$). Among the married, this latter trend was somewhat stronger. About 71% of those who had been in the community less than 1 year, reported contacting kin outside Fort McMurray more than once a month. For the cohort who had arrived 1 to 2.5 years before the survey, the rate of contact was similar (75% reporting contact more than once per month). It dropped (to about 47%), however, for those who had been in the community longer than 2.5 years. This parallels the trend observed for contacts with friends outside Fort McMurray ($r = -0.151$, $p < 0.01$). These relatively weak trends towards more interaction within the community, and less outside of it, reflect what is perhaps a slow, small adjustment in network contacts with both friends and relatives.

Among married respondents who had lived in Fort McMurray for less than 1 year, contact with relatives inside the community is positively associated with satisfaction with family life (Table 58). Those who visit with relatives once a month or less have an average family satisfaction score of 89. Those whose

Table 58. Kinship contact and satisfaction with family life and with the community by time in Fort McMurray.

Time in Fort McMurray	Satisfaction with family life	Place to establish permanent home
<u>Averages out of 100</u>		
Less than 1 year		
Visit with relatives in Fort McMurray:		
≤once a month (50) ^a	88.7	51.8
>once a month (29)	94.2 ^b	51.8
Contact with relatives outside:		
≤once a month (23)	91.3	63.0
>once a month (56)	90.2	47.7
1 - 2.5 years		
Visit with relatives inside:		
≤once a month (81)	85.3	55.3
>once a month (25)	88.7	70.7 ^b
Contact with relatives outside:		
≤once a month (26)	85.8	59.7
>once a month (80)	86.3	58.8
More than 2.5 years		
Visit with relatives inside:		
≤once a month (85)	85.8	67.2
>once a month (46)	88.7	61.0
Contact with relatives outside:		
≤once a month (69)	85.5	64.5
>once a month (62)	88.3	65.3

^a Sub-sample sizes are given in brackets.

^b Differences are statistically significant ($p < 0.05$).

within-community kin contact is more frequent have an average score of 94. Initially high contact appears to improve adjustment to the community in the sense that it increases satisfaction with family life. Although the direction of the relationship is maintained for those who have lived in Fort McMurray for 1 to 2.5 years and for longer term residents, differences are not statistically significant at the 0.05 level.

Contact with relatives outside of Fort McMurray is not significantly associated with satisfaction with family life, no matter how long respondents lived in the community. Similarly, this outside contact is not significantly associated with opinions about Fort McMurray as a place to establish a permanent home. Those who interact less with kin do not evaluate their family life and the community more negatively. Perhaps such contacts are a matter of choice, and are not particularly restricted by distance.

Visiting with relatives inside the community is significantly related to community satisfaction for those who have lived in the community for 1 to 2.5 years. Again, those who have more contact with kin evaluate the community more positively. This may reflect greater kinship support translated into adjustment to life in the community.

Summing up the results, it can be concluded that hypotheses linking outside-the-community kinship contact with attitudes towards the family and the community are not supported. There is, however, some limited support for hypotheses asserting a positive association between these satisfaction measures and within-community kinship contact. Satisfaction with family life is higher if relatives are visited more frequently only for short-term residents of the community. Perhaps, after people have settle into life in Fort McMurray and other social contacts have been built up (Section 9), the relative importance of this kinship contact may decrease.

Evaluations of the community as a good place to establish a permanent home are influenced by within-community kinship contact only for medium-term residents. The explanation for this difference is not immediately apparent. It may be that this group of married

respondents are more likely to be slightly older and have young children born in Fort McMurray. Hence, they may be more conscious of the support provided by kinship networks.

10.3.5 Raising Children in Fort McMurray

There is some research evidence which suggests that families' geographic mobility can have adverse psychological effects on the children involved (Larson 1979:32). A survey of adult respondents cannot be used to directly test such an hypothesis. It can, however, allow a preliminary inspection of respondents' perceptions about problems encountered by parents in Fort McMurray. The fairly common belief that resource towns, because of their frequent lack of services and their various social problems, are poor places to raise a family is briefly addressed here.

The statement "There is lots for teenagers to do in this town" generated a wide range of response, with the larger proportion being disagreement. Forty-six percent of the total sample disagreed, 16% chose the neutral response category, and 31% agreed with this opinion statement about the community. Seven percent did not respond to this item. This perception about the absence of activities for young people reinforces the opinions about the difficulty of finding good recreation and entertainment expressed by a substantial part of the sample (Section 5). It also may account for the perception of problems with juveniles, particularly in Abasand Heights.

If there were problems, perhaps respondents with children would disagree more vigorously with this statement. In fact, the opposite is true. Using the original seven-point scale where higher values signify greater agreement, married respondents with children have an average score of 3.75. Married respondents without children have an average score of 3.25. All others in the sample average 3.22. Those sample members with children are significantly less likely ($p < 0.05$) to disagree that there is lots for teenagers to do in the community. This difference must be interpreted cautiously

since the maximum score on this scale is 7. None of these groups is expressing a great deal of agreement. In effect, respondents with children are disagreeing less strongly.

As part of a list of services which Fort McMurray residents might have found difficult to obtain (Section 5), respondents with children were asked if they had encountered problems in "finding adequate babysitting or daycare facilities". Of the 235 married respondents with children who answered this question, 35% did so in the affirmative.

While comparison data from other communities is unavailable, an attempt can be made to identify, within the community, the types of families most likely to have difficulty with this aspect of child-rearing. Significant relationships between responses to this question and either length of time in the community or total household income were not found. There were too few single parents in the sample ($n = 13$) to allow a reasonable test of the hypothesis that they would have more problems in this respect.

In response to the possible argument that men might be less likely to perceive problems in this area (because it is usually the mother who is responsible for finding a babysitter), women's responses to this question were found not to differ significantly from the responses provided by men (Figure 23). Respondents from households with children where both adults were employed full-time were no more likely to answer "yes" to this question than were respondents from single-career families. Apparently, the greater need for childcare services by dual-career families is met as adequately as the lesser need of families with only one parent in the labour force. More frequent visiting with relatives in Fort McMurray might mean that some relatives were actually living in the town. Assuming this to be the case, childcare assistance might be easier to obtain. However, those with more contact with relatives are no less likely to answer "yes" to this question.

The only statistically significant relationship found in Figure 23 is for differences by house type. About 26% of the families living in single detached dwellings report problems

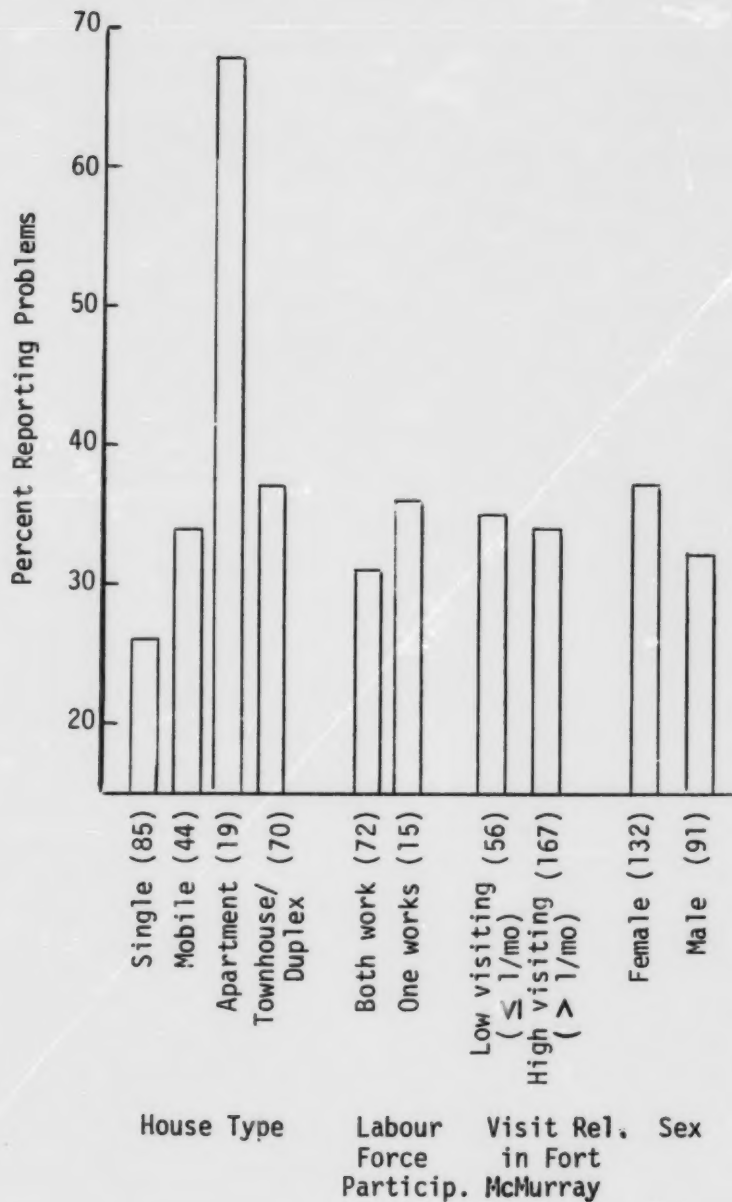


Figure 23. Babysitting/daycare problems by house type, labour force participation, kinship contact and sex. Married respondents with children only. Brackets contain sub-sample sizes.

finding babysitters or daycare. For mobile homes the figure is 34% and for townhouse/duplexes the figure is 37%. Apartment dwellers report problems in the highest proportion of cases (68%). Given the high density of apartment dwellings, it is probably not the physical proximity of potential babysitters that matters. It may be that people in multiple family housing, who are usually renters, cannot afford what is available. Also, other residents of multiple family dwellings may not have children (either old enough to babysit, or young enough to exchange babysitting). Besides, norms concerning privacy and anonymity may inhibit the contact necessary for finding this service. As noted in Section 4, residents of single detached housing are much more likely to know their neighbours than are residents of other kinds of dwellings.

The question "How often do you and your children do things together?" elicited an "often" or "very often" response from 71% of the 235 parents in this sample of Fort McMurray residents. The response categories for this question (never; seldom; sometimes; often; very often) were scored 1 through 5. The men ($n = 96$) in this sub-sample of parents had an average score of 3.72 ($s = 0.94$). The difference between this average and the average score for women ($\bar{x} = 4.21$; $s = 0.77$; $n = 136$) is statistically significant ($p < 0.01$). Since a minority of married women in this community are in the labour force, it is not unusual to find women spending more time interacting with their children.

Those respondents who had brought children to Fort McMurray were asked if interaction with their children had decreased, increased or remained the same since moving. There were no differences by sex of respondent in answers to this question. Of the 214 parents in this group 52% reported no change in interaction with children. But while 10% reported that interaction with their children had decreased after moving, 38% reported the opposite effects.

In short, the effects of moving to this resource town on reported parent-child interaction are either neutral or positive for a full 90% of the parents in the sample. Furthermore, the less

frequent parent-child interaction reported by males is apparently not a consequence of living in this resource town, since men are no more likely than women to report a change in interaction patterns after moving.

The simple hypothesis that more frequent interaction with children is associated with greater satisfaction with family life finds support in this survey data (Table 59). Those who spend more time with their children are also more likely to view Fort McMurray as a place to establish a permanent home, but the relationship is not statistically significant. Similarly, an increase in parent-child interaction after moving to Fort McMurray translates into a more positive evaluation of the community. Again, the differences are not large enough to allow confidence that they did not occur by chance. On the other hand, parents who have experienced trouble finding adequate babysitting or daycare are significantly less likely to view this town as a good place to settle permanently.

10.3.6 Patterns of Marital Interaction

Whereas over 70% of the married parents in this sample reported "doing things together" with their children "often" or "very often", only 40% of the married respondents answered similarly to the question "How often do just the two of you get out together?" (Table 60). When asked about changes since coming to Fort McMurray, 46% of those who were married at the time of moving stated that no change had occurred. About 26% reported that they now got out together more frequently, but 28% admitted that, since moving to Fort McMurray, the frequency of this type of activity with their spouse had decreased. This compares to only 10% of the parents who reported a post-move decrease in interaction with their children. We can tentatively conclude, therefore, that moving to this community may have more substantial effects on frequency of interaction between spouses than between parents and children. Part of the explanation may be the limited availability of entertainment and recreation activities in the community (Section 5), although the frequency of overtime work (Section 6) may also help explain this finding.

Table 59. Satisfaction with family life and with the community by parent-child interaction and daycare-babysitting problems.

	Satisfaction with family life	Place to establish permanent home
Frequency of interaction with children:	<u>Averages out of 100</u>	
Never/seldom	78.5	57.2
Sometimes	83.7	54.3
Often	88.0	66.8
Very often	93.7 ^a	63.2
Change in frequency since moving:		
Decreased/same	88.7	60.5
Increased	88.3	64.2
Problem finding daycare/ babysitting:		
Yes	88.2	53.0
No	88.7	65.5 ^a

^a Differences are statistically significant ($p < 0.05$).

Table 60. Patterns of marital interaction.

Marital interaction	Frequency				
	Never (%)	Seldom (%)	Some- times (%)	Often (%)	Very Often (%)
How often do just the two ^a of you get out together?	3.1	21.7	35.2	27.7	12.3
How often you and your spouse disagree about:					
(a) Spending money:	15.9	37.2	29.7	12.2	5.0
(b) Work schedules:	41.6	28.4	24.4	3.7	1.9
(c) Housekeeping:	26.6	31.3	28.1	10.3	3.7
(d) Visiting/writing relatives:	46.2	30.0	16.6	5.0	2.2
Husband/wife communication:					
(a) Discuss work:	1.6	9.4	19.1	40.6	29.4
(b) Share personal problems:	0.6	3.1	15.4	37.4	43.4
	Husband all (%)	Husband more (%)	Share equally (%)	Wife more (%)	Wife all (%)
Family division of labour:					
(a) Earning family income:	43.1	35.3	20.3	0.9	0.3
(b) Housekeeping:	0.3	0.6	13.2	50.0	35.8
(c) Keeping in touch with relatives:	0.6	3.5	49.1	38.1	8.8

^a Sample size for this item was 318; 320 for all other items.

Respondents who interacted more frequently with their children were found to be more satisfied with their family life. A related hypothesis is that more frequent interaction with one's spouse will be associated with greater family-life satisfaction. Similarly, an increase in interaction since moving to Fort McMurray would be expected to be linked with a higher level of satisfaction.

Larson (1979:46) argues that "families with relatively strong affective ties and fulfilling interpersonal relationships are considerably more adaptable in problematic situations". He also states (1979:46) that "families with flexible systems of role organization appear to be more adaptable to both minor and major changes". Assuming that a positive evaluation of the community as a place to establish a permanent home is a partial indicator of adaptability (to the new community), a partial test of these hypotheses can be attempted with the data obtained in this survey of Fort McMurray residents.

The quality of the relationship between marital partners can be measured by both the frequency of interactions between the partners and by the amount of positive or negative communication between them. Married respondents were asked how frequently they and their spouse disagreed about spending money, work schedules, housekeeping and visiting or writing relatives. The distribution of responses is provided in Table 60. Housekeeping and how money is to be spent appear to be larger sources of disagreement than the other two issues. It is interesting that, in a community with a reputation for marital problems created by husbands away at work for long periods of time (Van Dyke 1975; Hobart et al. 1979), 70% of the married respondents answered "never" or "seldom" to the "disagreement about work schedules" item.

A correlation analysis of these four items revealed moderate positive inter-item correlations ranging from 0.21 to 0.33. Respondents reporting marital disagreements in one area were also likely to report them in others. The four items were combined into

a marital disagreement index ($\text{Alpha} = 0.603$) which is used in the hypothesis tests reported below. While this level of reliability was only moderate, the four-item scale was judged to be a more broadly based measure than any one item.

To address the same issue (the quality of the marital relationship) from a positive perspective, married respondents were also asked how often they discussed their work and shared personal problems with their spouse. To the first question, 70% answered "often" or "very often", while 81% chose one of these two response categories for the second question (Table 60). Since the correlation between responses to these two measures of interpersonal communication is moderately strong ($r = 0.414$), they were combined into a single index of marital communication.

A flexible system of family role organization is, simply, one in which various family roles are shared. About 43% of the married sample members reported that, in their household, the husband was solely responsible for earning the family income. Almost the same proportion (36%) said that their division of labour was one in which the female partner was completely responsible for housekeeping. The "keeping in touch with relatives" role was much more likely to be equally shared by husband and wife (Table 60). The responses to this last item did not vary systematically with those to the first two division of labour questions. Consequently, it is not included in any of the subsequent analyses.

Responses to the "earning family income" and "housekeeping" items were recoded (husband or wife all = 1; husband more or wife more = 2; share equally = 3) to create two three-category indicators of role flexibility. Higher values signify greater sharing of the role in question. The correlation between these two recoded variables was 0.325. To simplify the analysis, they were combined into an index of family role flexibility.

The frequency with which the respondent and his or her spouse "get out" together is positively associated with both of the dependent variables (Table 61). Those who spend more time with their spouse report more satisfaction with their family life, and are more

Table 61. Satisfaction with family life and with community by marital interaction patterns.

Marital interaction		Satisfaction with family life	Place to establish permanent home
		Averages out of 100	
How often do just the two of you get out together?	Never/seldom (79) ^a	84.0	55.0
	Sometimes (112)	88.0	59.5
	Often (88)	89.3	63.0
	Very often (39)	90.2	64.5
Change in "getting out" with spouse, since moving: ^b	Decreased (72)	87.5	49.5
	Remained the same (116)	87.3	62.5
	Increased (60)	91.3	65.3 ^c
Husband-wife disagreement index:	Low (77)	91.3	59.7
	↓ (85)	89.7	59.0
	(77)	84.3	59.0
	High (81)	84.8 ^c	61.8
Husband-wife communication index:	Low (58)	79.8	63.8
	↓ (124)	88.0	60.5
	High (142)	90.0 ^c	57.7
Family role flexibility index:	Low (69)	90.7	61.0
	(94)	86.7	61.0
	(90)	87.2	60.0
	↓ (44)	84.8	58.7
	High (21)	88.8	52.5

^a Brackets contain sub-sample sizes.

^b Sample includes only those married when they moved to Fort McMurray (N = 248).

^c Differences are statistically significant ($p < 0.05$).

likely to positively evaluate the community. However, the differences between groups in responses to these questions are not large enough to allow confidence that they did not occur by chance ($p > 0.05$). On the other hand, those who report more time spent with their spouse since moving to Fort McMurray are significantly more likely to agree that "this is the kind of place where you can establish a permanent home".

Both the index of marital disagreements and the index of marital communication are significantly associated with responses to the question about family-life satisfaction. Less disagreement and more communication covary with greater satisfaction, as would be expected. But these two indices, crude measures of the quality of husband-wife interaction, are not significant predictors of positive community evaluations. It appears that "families with relatively strong affective ties and fulfilling interpersonal relationships" (Larson 1979:46) are not more likely to view Fort McMurray as a good place to settle down.

The calculated index of family role flexibility does not covary systematically with either of the attitudinal dependent variables used in Table 61. It is not significantly associated with responses to either the measure of family-life satisfaction or the question about Fort McMurray as a place to establish a permanent home.

A quick summary of the analysis results displayed in Table 61 must include several points. First, there is some evidence (although only one of the four relationships is statistically significant) that couples who "do things" together or "get out together" are more satisfied with their family life and with the community as a place to live. Second, there is a clear relationship between indicators of the quality of a marital relationship (the disagreement and the communication indices) and family life satisfaction. However, these two "quality of relationship" indices are not related to community satisfaction. "Getting out together" translates into community satisfaction while "talking/sharing/discussion" do not.

These latter items refer directly to the family. The former actually means "getting out together in the community". Finally, there is no support for the hypotheses that greater flexibility in the organization of family roles is associated with increased family-life and community satisfaction or adjustment to the community.

10.3.7 Determinants of Family Satisfaction

Only a few control variables have been used in the above tests. If the intention had been to provide a definitive description of the correlates of family satisfaction, it would have been necessary to begin with an inspection of the effects of demographic, social, economic and other factors. However, it is family-life satisfaction in Fort McMurray which is of primary interest here. Hence, tests of hypotheses about the effects of a resource town milieu on family-life satisfaction have been highlighted. Nevertheless, it is important to conclude this discussion of the correlates of family-life and community satisfaction with multivariate analyses which include tests of the effects of control variables.

Inspection of zero-order correlations (Table 62) reveals that some demographic variables (age and time in Fort McMurray), as well as indicators of social status (the level of living index and house type) and employment status, are significantly related to family-life satisfaction and community satisfaction. There is some utility, then, in inspecting the effects of these and other variables on the dependent variables used throughout this section. Table 63 contains two reduced form multiple regression equations, both the products of step-wise multiple regression procedures. A variety of possible predicting variables were initially included, but only those which had significant independent effects on the dependent variables were used in the calculation of the equations in Table 63.

The earlier analysis of family-life satisfaction included all married respondents (with or without children). However, since frequency of "doing things together" with children has the strongest

Table 62. Family life satisfaction and community satisfaction with selected indicators: zero-order correlation coefficients.

Independent variable	Satisfaction with family life	Place to establish permanent home
	Correlation Coefficients ^a	
Communication with spouse index	0.210 (318) ^b	-0.083 (311)
Family role - flexibility index	-0.073 (318)	-0.047 (311)
Disagreement with spouse index	-0.174 (320) ^b	0.032 (313)
"Get out together" with spouse	0.132 (318) ^b	0.099 (311) ^b
"Do things together" with children	0.285 (247) ^b	0.097 (241)
Visit with relatives in Fort McMurray	0.096 (324) ^b	0.017 (316)
Contact with relatives outside of town	0.070 (321)	-0.024 (314)
Trouble obtaining babysitting (yes=1)	0.001 (245)	-0.128 (240) ^b
Sex of respondent (male=1)	-0.061 (324)	0.080 (316)
Age	-0.084 (324)	0.138 (312) ^b
Education (years)	-0.020 (321)	0.038 (313)
No. of children in household	0.066 (324)	0.121 (316) ^b
Time in Fort McMurray	-0.065 (316)	0.122 (308) ^b
Made exploratory visit	-0.051 (320)	0.093 (312) ^b
Joint decision to move (1-3)	0.088 (312)	0.045 (305)
Lived in other resource towns (yes=1)	0.038 (324)	0.039 (316)
Total 1978 household income	-0.078 (260)	0.028 (256)
Total debt (excluding mortgage)	-0.049 (259)	-0.006 (254)
Level of living index	-0.127 (306) ^b	0.209 (299) ^b
House type (single=1)	-0.074 (324)	0.120 (316) ^b
Time in present residence	-0.050 (324)	0.105 (316) ^b
Currently employed (yes=1)	-0.101 (323) ^b	0.138 (315) ^b
Dual-career family (yes=1)	-0.082 (324)	0.074 (316)

^a Brackets contain sub-sample size from which the correlation coefficient was calculated.

^b Coefficient is statistically significant ($p < 0.05$).

Table 63. Multiple regression equations: family life satisfaction and community satisfaction with selected independent variables.

A. Dependent variable: Satisfaction with family life (1-7)

VARIABLE	B	St. error	Beta	F	r
"Do things together" with children	0.261	0.055	0.292	22.68	0.310
Disagreement index	-0.041	0.018	-0.144	5.37	-0.211
Level of living index	-0.033	0.013	-0.153	6.09	-0.145
"Get out" with spouse	0.119	0.052	0.144	5.30	0.127
Visit with relatives in town	0.046	0.022	0.131	4.55	0.120
Constant	5.523				
	$R^2 = 0.177$		$F = 9.51$		$N = 227$

B. Dependent variable: Place to establish permanent home (1-7)

Level of living index	0.079	0.039	0.135	4.12	0.168
Currently employed (yes = 1)	0.733	0.290	0.166	6.40	0.155
"Do things together" with children	0.366	0.161	0.153	5.18	0.097
Age	0.032	0.018	0.120	3.11 ^a	0.133
Constant	0.921				
	$R^2 = 0.079$		$F = 4.77$		$N = 227$

^a Not significant at the 0.05 level. All other effects reach this significance level.

zero-order correlation with family life satisfaction ($r = 0.285$) of all the variables inspected (Table 62), it is necessary to include it in the analysis. Consequently, the regression equations in Table 63 are calculated from responses provided by 227 of the 235 married respondents with children.

A combination of five variables accounts for 18% of the variance in responses to the family-life satisfaction question. The frequency of parent-child interaction has the strongest effect ($Beta = 0.292$), but, controlling on the other variables in the equation, "getting out together" with one's spouse is also significantly associated with family-life satisfaction ($Beta = 0.144$). Net of the effects of these two family behaviour measures, we find that more disagreement with one's spouse is associated with less satisfaction ($Beta = -0.144$). We noted earlier that frequency of visiting with relatives in Fort McMurray was significantly associated with family-life satisfaction only for short term residents. Controlling on the four other variables in the first equation in Table 63, this variable now has a small but significant effect that is not conditional on the length of time lived in the community.

A level of living index with higher values representing a higher standard of living is negatively associated with family life satisfaction ($Beta = -0.153$). Those reporting a higher level of living are likely to report a lower level of family-life satisfaction. This finding is difficult to explain, particularly after noting (equation B) that a higher level of living is also found to accompany a greater amount of agreement with the statement "This is the kind of place where you can establish a permanent home" ($Beta = 0.135$). It appears that an individual's standard of living translates into a more positive evaluation of Fort McMurray as a place to live, but a less satisfied evaluation of family life. The simple explanation that a higher standard of living is the product of long hours of work which produce both a higher income and more family disagreements is not adequate. Total family income is not significantly associated

with family-life satisfaction, and the effects of "disagreements with spouse" are already accounted for in equation A. Similarly, the argument that a higher level of living is based on accumulated debts which, in turn, lead to family-life dissatisfaction, is not supported. Debt, like income, is not significantly related to the dependent variable.

Those currently employed are more likely to positively evaluate Fort McMurray (Beta = 0.166). The social contacts that employment provides are probably responsible for this increased tendency to consider Fort McMurray a good place to settle permanently. Finally, as with family-life satisfaction, "doing things together" with one's children is also positively associated with respondent's evaluations of the town (Beta = 0.153). The effects of age, while not statistically significant ($F = 3.11$), are included in the calculation of the second equation in Table 63 because, until they are taken into account, they suppress the effects of parent-child interaction. Together, level of living, employment status, parent-child interaction and age explain 8% of the variance in the measure of community satisfaction.

Considering both equations A and B, we find that parent-child interaction has positive effects on both of the dependent variables. Interpersonal relationships between marital partners ("getting out together" and "disagreements") influence family satisfaction. So does contact with relatives inside Fort McMurray. Activity in the labour force, an indicator of social participation, is also a correlate of community satisfaction. Demographic variables are not important, nor are social status variables such as income or debt. Circumstances surrounding the original move to Fort McMurray (exploratory visits, joint decision-making), which may have been important at the time of the move, do not appear to have lasting effects. Neither is length of residence in the community associated with either family-life satisfaction or community satisfaction. Longer residence in Fort McMurray does not appear to lead to any negative impact on perceived quality of family life. In brief,

these results suggest that measures of current interpersonal behaviour (with children, spouse or relatives) and social interaction (employment status) have significant effects on satisfaction with family-life and with the community as a place for a permanent home.

10.4 SUMMARY

This examination of the effects of resource development and rapid social change on family life sought to go beyond indirect measures (records of divorce, mental illness, liquor sales), and the expert opinion of the helping professions. Since they see the problem cases, they may overestimate the severity of the situation.

The question is, have family organization and stability suffered among those who have moved to Fort McMurray? The respondents to the survey agree that family breakdown is common in Fort McMurray (72%), and to a lesser degree (53%), agree that marital infidelity is common. In other words, they share the opinion of experts in the helping profession.

Fort McMurray has a relatively high proportion of married residents (over three-quarters) and a declining proportion of single residents. The proportion married looks similar to that for Alberta or Canada as a whole. Household size is slightly larger (with more children) than the rest of Alberta. This is understandable given the relative youth of the population. There is no evidence of lower fertility in Fort McMurray when age is taken into account. People are having and planning to have families at rates similar to those in the rest of Alberta and Canada.

The housing situation for single respondents appeared to be different from that in Edmonton only because of the presence of a higher proportion of mobile homes in Fort McMurray. When mobile homes were added to single detached dwellings, the proportions in different housing types in the two cities looked very similar. While married Fort McMurray respondents had a higher proportion of single dwellings than did the single, they appeared to have a low proportion in comparison to people in Edmonton. Fewer married

residents of Fort McMurray appear to live in apartments than is the case in Edmonton, but far more live in mobile homes and in duplex/townhouse accommodations. Taking all multiple family dwellings together, the proportion inhabited by married couples is higher in Fort McMurray (43%) than it is in Edmonton (33%).

The reported quality of family life is equally high in both Fort McMurray and Edmonton. Ratings in Fort McMurray averaged 84 points out of 100; thus there is no evidence of negative impact of development on family life. While a far smaller proportion of the sample rated Fort McMurray as a good place to establish a permanent home ($\bar{x} = 60$), ratings on this score did not affect satisfaction with family life. The situation in the community appears to have little effect on respondents' evaluation of the quality of their own family life. In addition, length of residence in the community was unrelated to family satisfaction. Again, it appeared that the community had little effect, and that families were able to adjust satisfactorily. People who had lived in the community a long time did not feel that it was a better or a worse place to establish a permanent home.

About 53% of the married respondents had come to Fort McMurray for an exploratory visit prior to moving. Less than one-half of the wives had come as well but, in over 60% of the cases, the decision to move was made jointly. This appeared to have no effects upon present family satisfaction, or upon attitudes towards the community. If there were any effects, they were transitory.

Kin contact outside the community has no significant effects on family life satisfaction, no matter how long people had lived in Fort McMurray. However, interaction with relatives within the community has a positive effect on family satisfaction for those who had lived in the community a relatively short period of time (less than one year). Local kin contact appears to help the family settle in but, after that, other social contacts may become more important for integration into the community.

Only 31% of the respondents agreed that there was lots for teenagers to do in Fort McMurray. This indicated an absence of activities that parallels the findings for services (good recreation

and entertainment a problem to find) and problems with juveniles (particularly in Abasand). About 35% of the respondents indicated problems with getting daycare/babysitting, particularly if they lived in apartments. Only 10% reported that the move to Fort McMurray resulted in a decrease in their interaction with their children and 38% said that it had increased since their arrival. An increase in interaction with children was positively associated with satisfaction with family life.

While 70% of the sample reported doing things with their children often or very often, only 40% reported that they and their spouse got out together alone that frequently. About one-half reported that interaction with their spouse had not been changed by the move to Fort McMurray, and just as many respondents thought that it had increased as thought that it had decreased. The more time respondents spent interacting with their spouse, the greater their satisfaction with family life and the most positive their attitudes towards the community.

Demographic factors were not important determinants of attitudes towards the family or the community. Multivariate analysis revealed that increased interaction between parents and children had a positive effect on satisfaction with family life and perceptions of the community as a place to make a permanent home. There was also a positive effect of marital interaction on family satisfaction. However, again, there were no effects of length of residence in the community. In this respect, marital satisfaction was uniformly high. Generally, families appeared to adjust well to the circumstances they found in Fort McMurray.

11. LIFE IN FORT McMURRAY: INDIVIDUAL EVALUATIONS

Subjective evaluations of particular dimensions of life in Fort McMurray have been discussed in several of the previous sections. Underlying these analyses of attitudinal data is the assumption that satisfaction with housing, family life, services, employment and other factors are all interrelated indicators of adjustment to life in a community. That theme is pursued further in this section. Comparisons between and within communities focus on reported levels of satisfaction with various areas of life and on respondents' description of their own psychological well-being.

While only attitudinal dependent variables are used, many of the demographic and behavioural measures introduced earlier are employed as explanatory constructs. For example, house type and area of residence have been found to influence perceived housing quality. The survey results show that participation levels of Fort McMurray residents are not particularly low and household incomes are above average. These and other factors are brought forward into this general discussion of psychological well-being in Fort McMurray.

11.1 SUBJECTIVE INDICATORS OF ADJUSTMENT

11.1.1 General Satisfaction Measures

Several of the direct questions about satisfaction with specific areas of life have been discussed earlier, but their re-inspection is still useful. Respondents replied to them by choosing responses from a seven-point (very dissatisfied to very satisfied) scale. The average response was transformed into a score on a scale of zero to 100 for presentation in Figure 24. Similar questions were asked in the 1979 EAS. A comparison with these (transformed) average responses from Edmonton is also provided.

The results from the two surveys show high reported levels of satisfaction with all five of these aspects of life in both Fort McMurray and Edmonton. The lowest score (65 out of 100) is that for neighbourhood satisfaction in Fort McMurray, but even this score has to be interpreted as "positive" rather than "negative".

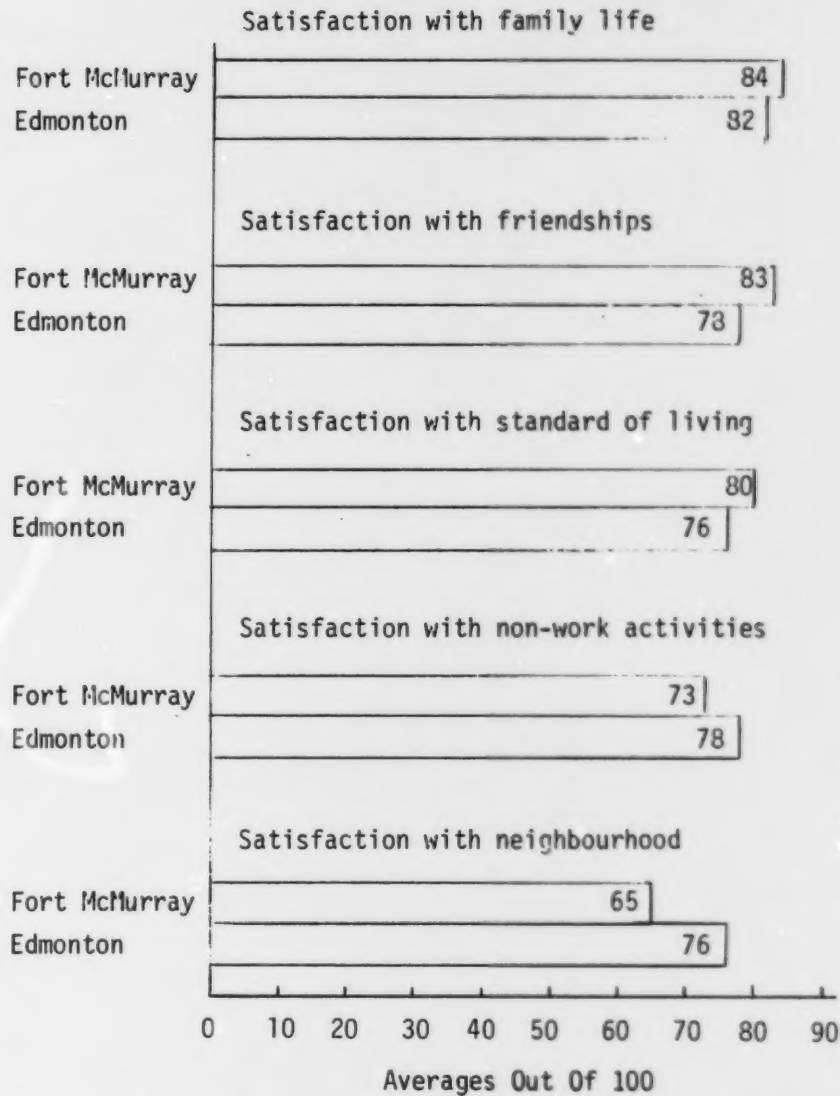


Figure 24. Satisfaction with various areas of life in Fort McMurray and Edmonton. Source for Edmonton data: Edmonton Area Study 1979, Population Research Laboratory, the University of Alberta. All differences are statistically significant ($p < 0.01$) except for family life ($p > 0.05$).

Although the differences between communities are not large in absolute value, in four of the five cases they are statistically significant. Two of these differences are in Edmonton's favour and two favour Fort McMurray. Thus the safest conclusion is that, overall, Fort McMurray residents do not report less satisfaction with life in their community than do residents of Edmonton. However, there is merit in looking at the individual questions.

As noted in Section 10.3.1, reported satisfaction with family life differs little between the two communities. However, Edmonton residents report less satisfaction with friendships than do their northern counterparts. This corresponds with the earlier finding that Fort McMurray residents participated fairly extensively in both formal and informal social activities. In fact, Fort McMurray residents interacted with friends significantly more often than did respondents to the 1979 EAS. Fort McMurray residents also report significantly more satisfaction with their standards of living than do residents of Edmonton. This topic is discussed in more detail in Section 11.3.

On the other hand, residents of Fort McMurray are less satisfied with non-work activities and with their neighbourhoods. With respect to non-work activities, it is obvious that Fort McMurray has less variety in entertainment facilities (theatres, night-clubs, restaurants, sports facilities) than does the larger city of Edmonton. A sizeable proportion of the residents of the northern town consider finding good entertainment and recreation to be a problem (Section 5). Consequently, the lower average satisfaction with non-work activities is not surprising. The dissatisfaction with "outside" features of housing expressed by Fort McMurray respondents has already been discussed (Section 4). This negative evaluation of available playgrounds, landscaping, and privacy probably transfers to neighbourhoods as a whole. The relatively negative evaluation of residence environments may also be a partial function of the perceived quality of services dealing with streets, roads, and animal control. It may also involve problems with juveniles in

some areas (Abasand Heights). Together these housing and service problems may account for the considerably lower satisfaction score found in Fort McMurray.

11.1.2 Affect Self-Reports

Questions about respondents' emotional well-being can be less area-specific than satisfaction measures while still being useful in a study of residents' adjustment to life in a particular community. A somewhat altered version of Bradburn's (1969) negative and positive mood scale was employed to gather respondents' own descriptions of their current emotional state. They were asked how often in the past few weeks they had felt: (1) lonely or remote from other people; (2) particularly excited or interested in something; (3) depressed or very unhappy; (4) pleased about having accomplished something; (5) bored; (6) proud because someone complimented them on something they had done; (7) angry; and (8) upset because someone criticized them. The distribution of responses for each of these affect self-report items is displayed in Table 64.

Recognizing that respondents may feel some constraints in admitting to "negative" emotions (e.g., feeling depressed), these results appear to describe a relatively normal population. A small proportion admit to frequently (often or very often) having felt lonely, depressed, bored, angry, and upset. About one-quarter of the respondents indicated that they were sometimes bored, and 39% replied that they were sometimes angry. However, people were rarely very upset or depressed and only 14% reported often feeling lonely or remote from others. There is little evidence here of negative effects of isolation. The majority of the sample reported a generally positive emotional state. These results, in combination with the responses to the five satisfaction items, suggest that respondents are relatively positive in their outlook on life. Widespread negative emotional consequences of life in Fort McMurray are not to be found.

Table 64. Affect self-reports.

Affect	Frequency					$\bar{x}^a$
	Never (%)	Seldom (%)	Sometimes (%)	Often (%)	Very Often (%)	
Lonely/remote	44.2	24.0	17.2	8.1	5.6	2.061
Excited/interested	6.5	11.2	37.0	30.5	14.4	3.353
Depressed/unhappy	33.7	37.9	19.1	7.0	2.3	2.063
Pleased	2.6	6.7	36.7	34.2	18.8	3.606
Bored	30.2	24.9	27.4	10.5	6.7	2.385
Proud	7.4	13.5	48.1	20.7	9.5	3.115
Angry	9.8	31.6	39.3	13.3	5.3	2.726
Upset	33.7	43.3	18.1	3.3	1.2	1.944

^a Averages calculated by assigning numeric values as follows:
 never = 1 seldom = 2 sometimes = 3 often = 4 very often = 5.
 Sample size = 430.

Are these self-reports of affect relatively high or low? Similar questions were asked in the 1979 EAS. Only a few detailed comparisons are made with that survey since the manner in which the questions were asked differed in a number of ways (number of items, number of response categories). About the same proportion of respondents in Edmonton (60%) and Fort McMurray (56%) reported never or seldom being bored. In Edmonton, 68% said that they never or seldom felt depressed and 65% answered never or seldom to the question about feeling lonely or remote from others. The percentages in the Fort McMurray survey were, again, similar (72% and 68%).

If scales constructed from these questions are weighted to account for both the different numbers of questions and response categories, Fort McMurray respondents tend to report slightly more positive emotional states than do residents of the larger community. The difference is not significant ($p > 0.05$). There is no evidence here that Fort McMurray residents, as a group, are particularly beset by depression or boredom or other negative feelings. Of course, this does not preclude finding groups within the community for whom this conclusion is not appropriate. That subject will be discussed later in Section 11.2.

11.1.3 Measures of Alienation

Given the general definition of alienation as a negative psychological reaction to a non-fulfilling social structure, it can be argued that some aspects of life in a resource development town might be alienating for certain individuals or groups. In other words, measures of alienation can complement satisfaction questions and self-reports of emotional well-being.

Recognition of an inability to control one's environment is considered one of the prime components of alienation (Seeman 1959; Kohn 1976). The concept of "powerlessness" clearly also has relevance in the Fort McMurray context, where some residents might feel that their life style was not of their own choosing. Three questions about powerlessness, developed by Kohn (1976), allow this issue to be

addressed. A full 83% of the respondents agreed that "Most of the things that happen to me are the result of my own decisions". Even more of the sample (86%) agreed with the statement "I generally have confidence that when I make plans I will be able to carry them out". A more direct statement, "I often feel powerless to get what I want out of life", drew agreement from 24% of the respondents.

In short, relatively few respondents admit to strong feelings of powerlessness. As in the analysis of measures of satisfaction with various dimensions of life, only a minority of the respondents appear to have a negative outlook on life.

11.1.4 Multiple Indicators of Adjustment

This section began with the proposition that satisfaction with a variety of aspects of community life could be taken as one of a number of indicators of adjustment to life in the community. The validity of the argument that these various subjective measures are interrelated can be tested by inspecting the correlations among them.

The five area-specific satisfaction items displayed in Figure 24 were combined into one scale of general satisfaction ($\text{Alpha} = 0.573$). The relatively low reliability for this scale indicates the wide diversity of content that it contains. Satisfaction with one area of life does not necessarily translate directly into satisfaction with other areas. When added together, the eight indicators of current emotional state described in Section 11.1.2 of this report (recoded where necessary to make the higher values signify less emotional well-being), form a moderately reliable negative affect scale ($\text{Alpha} = 0.650$). Summed responses to the powerlessness questions provide a scale with weak to moderate reliability ($\text{Alpha} = 0.508$). Job satisfaction ($\text{Alpha} = 0.724$) and housing satisfaction ($\text{Alpha} = 0.840$) scales have higher reliabilities and have been analyzed in Sections 4 and 8. The 17 service evaluations (Section 5) form a scale with strong reliability ($\text{Alpha} = 0.831$). Table 65 contains a correlation matrix displaying the zero-order correlation coefficients among these six widely differing subjective response scales.

Table 65. Powerlessness, negative affect, and satisfaction indices: correlation coefficients.^a

	(1)	(2)	(3)	(4)	(5)	(6)
(1) Powerlessness	1.00	0.380 (0.144) ^b	-0.381 (0.145)	-0.140 (0.020)	-0.131 (0.017)	-0.350 (0.123)
(2) Affect scale		1.00	-0.362 (0.131)	-0.091 (0.008)	-0.112 (0.013)	-0.408 (0.166)
(3) Job satisfaction index ^c			1.00	0.156 (0.024)	0.240 (0.058)	0.261 (0.068)
(4) Housing evaluation index				1.00	0.382 (0.146)	0.418 (0.175)
(5) Evaluation of services					1.00	0.311 (0.097)
(6) General satisfaction index						1.00

336

^a All coefficients are statistically significant ($p < 0.05$). Those larger than 0.120 are significant at the 0.01 level.

^b Brackets contain the value of R^2 (the amount of shared variance).

^c Calculated with a reduced sample ($N = 269$); currently employed only.

Powerlessness is positively related to the affect scale ($r = 0.380$). Respondents who report more negative emotions (higher affect scale scores) are also more likely to admit feelings of powerlessness. Those who reported fewer feelings of powerlessness are significantly more likely to be satisfied with work ($r = -0.381$), to evaluate more positively the quality of services in Fort McMurray ($r = -0.131$), and to be satisfied with their housing ($r = -0.140$) and with life in general ($r = -0.350$).

Respondents whose general emotional state is less positive (higher affect scale scores) are significantly less satisfied with their jobs ($r = -0.362$) and with life in general ($r = -0.408$). They also provide somewhat negative evaluations of municipal services ($r = -0.112$), but this relationship is weak ($R^2 = 0.013$). People reporting more frequent feelings of boredom, depression, anger, and other negative emotions do report less satisfaction with the quality of their housing. Again the relationship is also weak ($R^2 = 0.008$).

The intercorrelations among job satisfaction, housing satisfaction and evaluation of services are all positive and statistically significant, ranging in size from 0.156 to 0.382. The strongest relationship is between evaluations of housing and services ($R^2 = 0.146$). All four of these specific measures are significantly correlated with the index of general satisfaction. Job satisfaction has the lowest correlation ($r = 0.261$) and even here, 6.8% of the variance is shared. Feelings of powerlessness ($R^2 = 0.123$) and negative affect ($R^2 = 0.166$) are more strongly related to general life satisfaction. So too are service evaluations ($R^2 = 0.096$) and housing evaluations ($R^2 = 0.175$). The strong influence of housing satisfaction on general life satisfaction emphasizes once again the importance of PHQ to the quality of life.

These correlation coefficients demonstrate that greater satisfaction and more positive attitudinal orientations are associated, whatever the measures used. These results provide some support for the proposal that, taken as a package, this group of attitudinal measures might be a fairly broad measure of adjustment

to life in Fort McMurray. A larger number of (possibly more specific) items could be employed in a survey without necessarily increasing our ability to understand and explain the process of adjustment.

11.2 DIFFERENCES WITHIN FORT McMURRAY

The conclusion that overall levels of satisfaction and emotional well-being in Fort McMurray are, if not high, at least normal need not mean that all groups are equally satisfied with their life in the town. Certain kinds of people may find adjustment more difficult, or differences in satisfaction may simply be a function of length of residence in the community. Some of these differences between groups and cohorts are discussed in the following section.

11.2.1 Correlates of Negative Affect

The results of research in other communities and knowledge of the peculiarities of life in resource development communities allow us to hypothesize a series of relationships between negative affect and a variety of independent variables.

11.2.1.1 Demographic variables. Research has generally demonstrated that men report less negative psychological orientations than do women (Dohrenwend and Dohrenwend 1976). Part of the explanation usually given is that, because of the male-biased structure of work, men have more power and are tied into social networks to a greater extent. Traditional female roles may be less rewarding than male roles (Gove and Tudor 1973). Those women who do enter the labour market may have to manage two roles, one in the home and the second in the work-place (Meissner et al. 1975). Furthermore, because of the form of sex-role socialization in our society, men are also less likely to report negative emotions (Balswick and Peck 1971).

Assessments of other resource development communities (Siemans 1973; Himelfarb 1976) and of Fort McMurray itself (Van Dyke and Loberg 1978:96, 108) frequently note that these communities are

particularly male-oriented and, consequently, especially dissatisfying for women. It is not surprising, therefore, to find that women in Fort McMurray report significantly ($p < 0.05$) more frequent negative emotions than do men. The average score on the negative affect scale for women is 17.11, while the male average was 16.23 (Table 66).

The effects on emotional well-being of several other demographic variables (marital status, number of children in the household, age, ethnic status, and religious affiliation, housetype and area of town) were also inspected. The results are not reported since none of the relationships was statistically significant.

11.2.1.2 Labour force participation. People who are active in the labour force would be expected to feel more positive about life in general. Friendships are made at work, the extrinsic rewards of work may reduce feelings of powerlessness and intrinsic rewards may lead to a more positive world-view. If labour force participation and negative emotional orientations are inversely correlated, the relationship should be found to be especially pronounced in a work-oriented community like Fort McMurray. A one-way analysis of variance supports this hypothesis (Table 66). Currently employed respondents have a significantly lower score on the negative affect scale than do respondents not active in the labour force. Since most of those not in the labour force are women, this may mean that sex differences are, in part, a consequence of labour force participation.

11.2.1.3 Social status. Psychological well-being and social status are generally found to be positively correlated (Kohn 1968; Turner and Gartrell 1978). The material advantages which accompany higher social status are a partial explanation of this relationship, since economic stress can lead to psychological problems (Liem and Liem 1978). The higher levels of formal and informal participation found among higher status groups may be further reasons to expect social status and emotional state to be correlated. Individuals more

Table 66. Negative affect: analysis of variance results.

	Average Negative Affect Score ^a	N
Sex:		
Male	16.23 _b	190
Female	17.11 ^b	227
Currently employed:		
Yes	16.45 _b	295
No	17.36 ^b	121
Education (years):		
0 to 9	17.58	65
10 to 11	16.74	90
12	16.89	111
13 to 15	16.06	90
16+	16.42	59
Organization memberships:		
Yes	16.45 _b	235
No	17.62 ^b	182
Visit with friends in Fort McMurray:		
Once a month or less	17.64 _b	109
More than once a month	16.36 ^b	307
Physical symptoms index:		
Scores ≤26	16.03	65
Scores 27 to 32	16.05	86
Scores 33 to 37	16.59	70
Scores 38 to 44	16.89 _b	75
Scores 45+	18.19 ^b	68
Years in Fort McMurray:		
0 to 1	16.61	117
1 to 2.5	16.67	127
2.5 to 7	17.05	108
7+	16.47	53

^a Higher values signify more negative affect.

^b Differences are statistically significant ($p < 0.05$).

closely tied into a variety of social networks are, clearly, less likely to feel separated (or alienated) from those around them. Despite all of this, the test of the relationship between education (a social status indicator) and negative affect revealed non-significant effects (Table 66). Further tests using total household income and a level of living scale produced results supporting the direction of the hypothesis (as did education) but, again, the differences were not statistically significant.

11.2.1.4 Formal and informal participation. Fort McMurray respondents who belonged to at least one formal organization reported fewer negative emotions ($\bar{x} = 16.00$) than did non-joiners ($\bar{x} = 17.36$). Similarly, those who regularly visited with friends in Fort McMurray (more than once a month) had higher self-reports of emotional well-being than did respondents who were less active socially. Tests using knowledge of government officials, frequency of interaction with neighbours, and number of neighbours known by name all produced similar results, although only the last of the three showed a significant difference. Earlier it was argued that social participation reflects adjustment to life in the community. Here some supportive evidence is presented; social participation and emotional well-being are interrelated.

11.2.1.5 Stress and ill health. There is an extensive body of literature detailing the linkages between stress, physical illness, and emotional well-being. Individuals experiencing more stressful events are more likely to become ill (Dohrenwend and Dohrenwend 1974), whereas higher self-ratings of health appear to be associated with greater life satisfaction (Clemente and Sauer 1976). While economic stress can intensify problems, social support from family or community act to mediate these consequences (Liem and Liem 1978). Thus, a positive association between stress levels and negative affect scores and between physical ill-health and the same dependent variables would be expected.

A list of 16 potentially stressful events (ranging from losing a job to changing residence) was presented to respondents. The number of these events which the respondent reported having experienced in the previous year became his or her score on a stress scale ($\text{Alpha} = 0.592$). A second list of 20 physical symptoms of ill health (e.g. stomach pains; trouble sleeping) was used to create a physical symptoms of ill health scale ($\text{Alpha} = 0.863$).

Respondents who had experienced more stressful events reported more negative emotions but the differences in means were not large enough to be statistically significant. However, a strong relationship exists between the physical symptoms index and the negative affect scale. Those who reported more symptoms of ill health were also more likely to score higher on the negative affect scale.

11.2.1.6 Length of residence in Fort McMurray. Generally one would expect longer term residents of a community to be more satisfied with their life in that community. Longer residence allows more time for adjustment while those unable to adjust may be more likely to leave. Presumably some of this greater satisfaction would lead to a greater degree of emotional well-being. However, if the living conditions in a town like Fort McMurray require greater than average adjustment from residents, as some would argue, then length of residence might have no effect, or a negative effect, on respondents' self-reports of current emotional state.

Length of residence is not significantly related with the negative affect scale (Table 66). There is a small increase in self-reports of negative emotions for medium to long term residents (2.5 to 7 years) but there is no systematic evidence that staying in Fort McMurray is likely to lead to less positive psychological orientations. Conclusions drawn from this absence of a significant relationship should, nevertheless, be presented cautiously. First, a relationship between length of residence (stability) and more positive emotions was not found, a relationship that might be

expected in other communities. Second, it is also possible that individuals who are most depressed or unhappy with life in the town are more likely to move out, leaving behind a select group of more positively oriented residents.

In brief, most of the expected relationships between variables are found in the analysis of these survey results. Women, those not active in the labour force and those less active socially, and respondents experiencing more stress or ill health all reported more negative emotional states. However, social status did not differentiate emotional well-being within the community. Finally, length of residence and this negative affect scale are not related. The differences within Fort McMurray are like those found in other studies. Furthermore, greater exposure to Fort McMurray living conditions does not appear to affect psychological well-being.

11.2.2 The "Cabin Fever" Hypothesis

Despite the above conclusion, one further hypothesis about causes of negative emotional states should be tested. Other students of resource development towns have argued that women not employed outside of the home feel trapped in such communities. Away from supportive relatives and friends and dependent on their husbands, they are victims of "housewife's psychosis" or "cabin fever" (Siemans 1973:24; Himelfarb 1976:20). Larson (1979) hypothesizes that, in resource development communities, dependent wives are candidates for depression and other psychological problems. At the same time he notes the absence of data relevant to this hypothesis.

This problem is obviously not peculiar to resource towns, since women in most communities tend to report more psychological and physical problems than do men. Although some authors argue that entering the labour force will not reduce stress for women (Meissner et al. 1975), the research evidence appears to suggest that the psychological benefits of outside-the-home employment balance or perhaps outweigh the costs (Northcott 1979).

It has already been noted that women in Fort McMurray report significantly more negative emotional states than those reported by male respondents. However, there is virtually no difference in average negative affect scores between married and non-married women. Since the "cabin fever" hypothesis really applies mainly to the former group, the following analysis will be restricted to the married women in the sample.

The 100 married women not active in the labour force report somewhat more negative emotions ($\bar{x} = 17.18$) than do the 73 currently employed married women ($\bar{x} = 16.90$). This difference is too small, however, to argue that it did not occur by chance ($p > 0.05$). At first glance, there is little support for the hypothesis.

Women living in different types of housing may experience different levels of emotional well-being. Similarly, presence or absence of children in the home can also influence psychological orientations. These factors should, then, be taken into consideration when examining the "cabin fever" hypothesis.

Non-significant ($p > 0.05$) differences in negative affect scores by both house type and number of children in the household are found. Single dwelling and duplex/row housing residents, and those without children, report somewhat fewer negative emotions. Housing type is, therefore, combined into two categories (single/duplex/row) and (apartment/mobile home) as is number of children in the household (none and one or more) for the analysis displayed in Figure 25.

None of the relationships within sub-groups portrayed in Figure 25 are statistically significant ($p > 0.05$). However, an interesting pattern of results appears. Better housing (single or semi-detached dwellings) and emotional well-being are positively related. Respondents with better housing do not differ greatly in affect self-reports on the basis of whether or not there are children in the household. However, in apartments and mobile homes, women with children report more negative emotions ($\bar{x} = 18.48$) than do

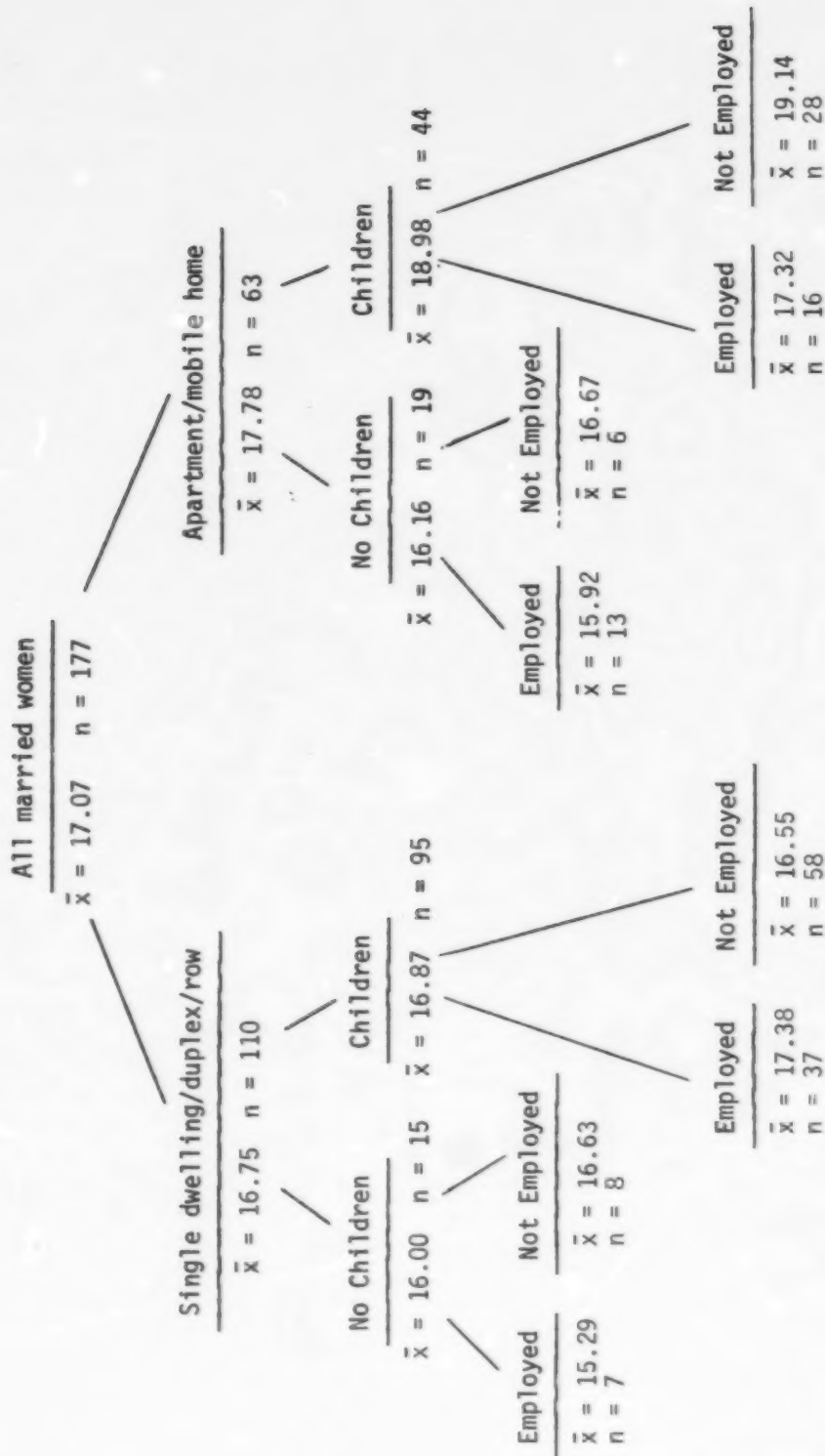


Figure 25. The "cabin fever" hypothesis. Average negative affect scores.

women without children ($\bar{x} = 16.16$). Employment status has varying effects on emotional well-being for respondents in different house types and depending on the presence of children in the household. Unemployed women without children have less positive emotional orientations than employed women without children, in both types of housing. However, in single/semi-detached housing, working women with children have higher negative affect scores than do mothers not in the labour force. For apartment and mobile home residents, the relationship is reversed. In this kind of housing, mothers staying at home with their children have higher scores than do mothers who have outside jobs.

Two points must be made in a summary of Figure 25. First, all of these affect self-reports are relatively positive in tone. Second, although strong evidence in support of the "cabin fever" hypothesis is absent, it is apparent that a combination of employment status, stage in the family life cycle, and housing type can explain some of the variation in emotional well-being of women in resource towns such as Fort McMurray. As we have seen, women who live in apartments or mobile homes with their children, and who do not have outside-the-home employment are most likely to report negative emotions ($\bar{x} = 19.14$). Working women without children living in single or semi-detached housing are least likely to do so ($\bar{x} = 15.29$).

11.3 FINANCIAL SELF-EVALUATIONS

11.3.1 Comparisons with Edmonton

Average incomes in Fort McMurray are considerably higher than in the rest of the province or the country. It is not surprising, therefore, to find that Fort McMurray residents report significantly greater satisfaction with their standard of living than do residents of Edmonton (Figure 24). However, respondents frequently tend to respond very positively to such general satisfaction questions.

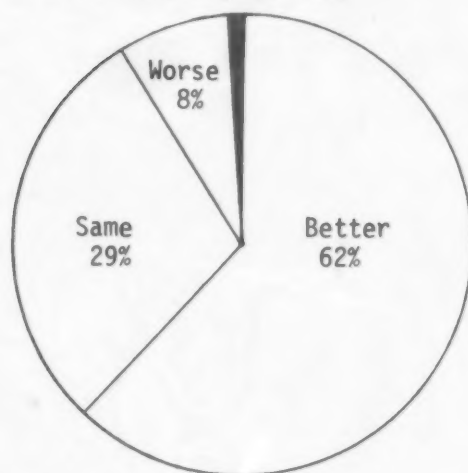
When respondents were asked whether they felt that they were better off, the same, or worse off financially than a year ago, 62% answered "better off", 29% said "the same", and 8% admitted to being "worse off" (Figure 26). Almost two-thirds of the sample believed things had improved financially for them in the year previous to the interview. The same question, when used in the Edmonton survey, found only one-half of the sample saying things had improved. If the three responses are assigned numeric values of 1 (worse off), 2 (the same) and 3 (better off), the difference between the Edmonton average ($\bar{x} = 2.40$) and the Fort McMurray average ($\bar{x} = 2.56$) is statistically significant ($p < 0.05$).

Fort McMurray respondents were also asked to speculate a year into the future. Seven out of 10 expected that they would be better off financially in a year. Only 2% responded pessimistically, while 24% expected no changes in financial position (Figure 26). There is clearly less financial optimism in the Edmonton sample. The difference between the average response (coded values assigned as in the first question) for Fort McMurray ($\bar{x} = 2.71$) and for Edmonton ($\bar{x} = 2.50$) is also significant ($p < 0.01$).

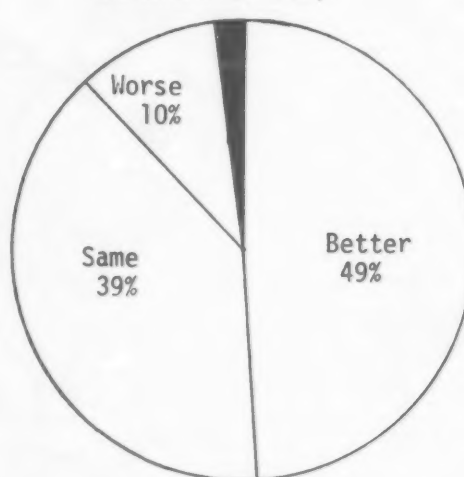
In brief, a solid majority of Fort McMurray residents report satisfaction with their current standard of living, feel that their financial position has improved in the past year, and expect further improvements in the coming year. Although Edmonton residents are themselves quite positive about finances, Fort McMurray residents are clearly more satisfied and more optimistic. The greater satisfaction and optimism have an objective basis since incomes are well above average in this town. Similarly, the tendency to say things have improved in the past year may be a function of the fact that approximately one-third of the sample moved to Fort McMurray in the past year. The probability that their incomes rose at that point is quite high.

Present financial position compared to a year ago:

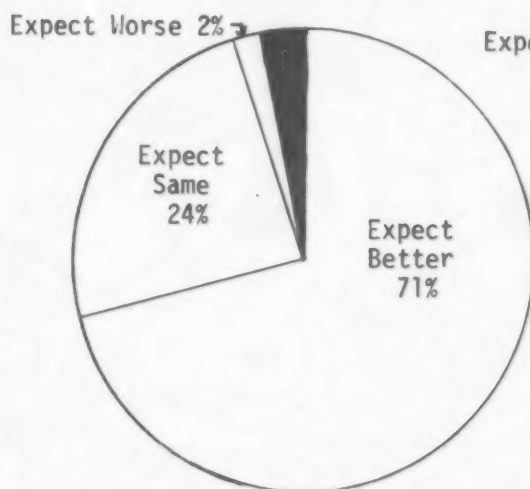
Fort McMurray (N=430)



Edmonton (N=440)

Present financial position compared to year from now:

Fort McMurray



Edmonton



Figure 26. Financial self-evaluations: Fort McMurray and Edmonton. Edmonton source: 1979 EAS, Population Research Laboratory, Department of Sociology, University of Alberta. Dark shaded areas in the figure represent percent non-response.

11.3.2 Alternative Measures of Financial Satisfaction

The three questions discussed above are all phrased with reference to the respondent. A question which referred to the community of Fort McMurray rather than the respondent generated a somewhat different response pattern. Twenty-nine percent of the sample agreed that "Life here seems to be a continual financial struggle". When the reference point is the community rather than the respondent, a little less satisfaction and optimism is apparent. Presumably, respondents were evaluating the community with reference to their own experiences when they answered this question. Individuals seem to feel less reluctance to negatively evaluate the community in general than to speak negatively about their own financial position. Expressing dissatisfaction with one's financial position may be considered as a reflection of one's own inability to succeed.

Another way of getting past respondents' tendency to be overly positive in their answers is to ask questions about behaviours rather than attitudes. A question about problems the respondent might have encountered in "saving as much as you had expected" in the last 12 mo in Fort McMurray was included in a check-list of problems. Almost one half (48%) of the sample answered "yes" to this question. Obviously, saving as much as one had expected is only one component of overall satisfaction with finances. This does demonstrate, however, that despite the extremely positive answers to attitudinal stimuli, financial problems are not totally absent in Fort McMurray.

11.3.3 Financial Satisfaction: Within-Community Differences

Sex of the respondent, marital status, household size, education, and level of debt were all introduced as independent variables in a series of analyses of variance. This attempt to locate possible problem groups failed to significantly differentiate responses to the financial self-evaluation questions. However, not all of the respondents in this survey were completely satisfied with, or totally optimistic about their financial positions.

Older respondents are significantly more likely to express satisfaction with their standard of living, particularly those over

44 years of age (Table 67). However, they are also significantly less likely to be optimistic about their financial future. Conversely, younger residents of Fort McMurray are less satisfied with their present financial position but expect things to improve. Since residents age 44 and older have relatively low total household incomes and level of living scores (Section 7), it would appear that their assessments of the future are probably objectively based. Despite this, they are highly satisfied with their present circumstances. Younger Fort McMurray residents are still expecting to do better in the future, no doubt because they have already been encouraged by financial success.

The longer respondents have lived in the community, the less likely they are to report that, financially, they are better off than a year earlier. As noted in Section 7, the largest income increases appear to occur when people move to Fort McMurray, not after they have been there for some time. Long term residents are less likely to expect improvements in the coming year, but this difference is not statistically significant. It was noted earlier that income levels drop off considerably for the cohort that has been in the community for more than 4 years. The conclusion drawn was that residents of Fort McMurray who have lived in the community since before the most recent development boom appear to have profitted less than newcomers. The financial self-evaluations presented here support that conclusion as respondents in the longer term residence group perceive that to be their situation.

Those Fort McMurray residents whose households contain an oil company employee are more satisfied with their current standard of living, and are most likely to report their present state as an improvement over the past. Although only the second of these relationships is statistically significant, the general pattern is one of greater financial satisfaction for those employed by (or having a spouse employed by) one of the oil companies.

The higher incomes received by oil company employees would be expected to account for their more positive financial self-evaluations. However, total 1978 household income is, by

Table 67. Financial self-evaluations by age, years in Fort McMurray, oil company employment, and total household income.

	Satisfaction with standard of living ^a	Present better than the past ^b	Expect future to be better ^b
Age:	Averages		
≤ 24	5.796	2.651	2.830
25-29	5.467	2.585	2.728
30-34	5.967	2.596	2.742
35-44	5.880	2.476	2.520
45+	6.302 ^c	2.506	2.691 ^c
Years in Fort McMurray:			
< 0.5	5.766	2.524	2.741
0.5-1	5.790	2.679	2.877
1-1.5	5.680	2.740	2.735
1.5-2.5	5.888	2.650	2.633
2.5-4	5.923	2.585	2.754
4-7	5.435	2.348	2.622
7+	6.037	2.444 ^c	2.635
Someone in household employed with an oil company:			
Yes	5.862	2.667	2.660
No	5.799	2.508 ^c	2.741
Total 1978 household income:			
≤ \$5 000	5.833	2.648	2.755
50 001- 19 000	5.641	2.453	2.781
19 001- 25 000	5.517	2.552	2.790
25 001- 30 000	5.767	2.651	2.667
30 001- 38 000	5.843	2.643	2.786
38 001+	6.017	2.593	2.517 ^c

^a Question discussed in Section 11.1.1.

^b Means calculated by assigning numeric values as follows:
worse off = 1; the same = 2; better off = 3.

^c Differences are statistically significant ($p < 0.05$).

itself, not significantly associated with either satisfaction with standard of living or with the question comparing present finances to the past. It is probably income in combination with other factors such as time in Fort McMurray, age, experience, and education which are more important as predictors of financial satisfaction. For example, those with the highest 1978 total household incomes are significantly less likely to expect financial improvements in the coming year. These highly paid respondents are probably more likely to have reached some kind of income plateau. If this is the case, these results suggest that they are fairly realistic about the chances for further quick improvements in their standard of living.

Summarizing Table 67, older residents of the town are more satisfied with their standard of living, but less optimistic about financial improvements in the future. Long-time residents of the community are less likely to report a financial improvement during the past year. Like the older residents of the town, respondents with higher incomes are also less optimistic about improvements in the coming year. Those with a household member employed by an oil company are more likely to evaluate their present financial condition as an improvement over the past. These results do identify within-community differences in financial satisfaction. But perhaps the more important conclusion to be drawn is that, overall, most respondents appear quite satisfied and optimistic. None of the sub-group means displayed in Table 67 are anywhere low enough to allow calling certain groups dissatisfied with, or pessimistic about their financial condition. In effect, these analyses have simply identified differing degrees of satisfaction and optimism.

11.4 SUMMARY

Fort McMurray residents are more satisfied with their standard of living and friendships than are residents of Edmonton who, in turn, are more satisfied with their non-work activities and their neighbourhoods. There is not a significant difference between communities in satisfaction with family life. The overall level of

reported satisfaction with these five diverse areas of life is high in both communities.

This sample of Fort McMurray residents contained few individuals who reported very frequent "negative" emotions such as depression, boredom or loneliness. A comparison to results from similar questions asked in the 1979 EAS showed Fort McMurray residents reporting somewhat more frequent "positive" emotions. Relatively few respondents admitted to strong feelings of powerlessness. In short, evidence that there is something unusual about the psychological orientations of Fort McMurray residents was not found.

After combining the five satisfaction items into one index of general life satisfaction, it was found that this index and the indices of negative affect, powerlessness, job satisfaction, housing satisfaction, and evaluation of services were all positively interrelated. Greater satisfaction in one area is reflected by greater satisfaction in another. Together, this package of subjective response indices provides a broadly based method of assessing adjustment to life in Fort McMurray.

Although average levels of satisfaction and psychological well-being are high in this northern community, there are some groups which report less positive emotional orientations. Women, respondents not active in the labour force, and those who have fewer formal and informal social contacts have higher negative affect scores. Respondents reporting less physical well-being also experience less emotional well-being. These results do not make Fort McMurray an unusual community for they are like those found in most communities.

Length of residence in the community and negative affect are not significantly related. There is little evidence that greater exposure to Fort McMurray living conditions leads to a more negative outlook on life. Similarly, there is no strong evidence in support of the "cabin fever" hypothesis -- the proposition that unemployed women in communities like Fort McMurray feel depressed or entrapped. However, a combination of housing type, stage in the family life cycle, and employment status are found to explain some of the

variation in negative affect scores. Married women living in apartments or mobile homes, who are not working outside the home and still have children at home, report experiencing the most negative emotions.

Fort McMurray respondents are very satisfied with and optimistic about their financial condition. Somewhat less satisfaction is expressed in responses to a statement about life in Fort McMurray being a continual financial struggle. These interviewees were significantly more likely than respondents in the 1979 EAS to state that their financial condition had improved in the past year. The same response pattern appears with a question about financial expectations for a year in the future.

Although the overall level of financial satisfaction and optimism is high, a few within-community differences do appear. Long-time residents are less likely to report financial improvements in the past year. This finding fits with the earlier conclusion that this group has not benefitted as much as others from the oil sands development (Section 7). Older residents are more satisfied with their standard of living but less optimistic about financial improvements in the future. These results also correspond to the previous findings; older residents typically have a higher standard of living but not necessarily a higher income. Finally, oil company employees, as would be expected given their higher than average incomes and better than average fringe benefit packages, are more likely to report financial improvements over the past year. In brief, in this community where financial satisfaction and optimism are generally high, those who have the most usually report a little above average satisfaction.

12. RESIDENTS' OPINIONS AND SUGGESTIONS

All respondents in this survey were asked for their opinions about the real beneficiaries of oil sands development. Suggestions for planning improvements in Fort McMurray were also solicited. These opinions and suggestions are presented and discussed in this section.

12.1 RESIDENTS' OPINIONS ABOUT DEVELOPMENT

Do respondents think that a few local businessmen are running the town and doing very well for themselves (Van Dyke and Loberg 1978:52)? How do the oil companies appear to fit into the picture? Alternatively, do respondents believe that some groups have been systematically "left out" of the benefits of development.

12.1.1 Who Has Benefitted Most?

"When there is a major development like the oil sands in Fort McMurray some people benefit and some don't. In your opinion, who has benefitted the most?" This was one of the few open-ended questions used in this survey. Interviewers were instructed to record up to three separate answers to this question, if the respondent volunteered that many. As it was, 391 of the respondents gave only one answer, 245 responded with two separate answers, and 94 identified at least three major beneficiaries of the oil sands development. A coding system, with 52 discrete codes was developed. These codes were then divided into nine response groups. The first eight groups accounted for 91% of the total 730 responses. The remaining 9% of the responses to this question differed too widely to allow grouping of any kind. The grouped responses to the "who benefits most from oil sands development" question are ranked by frequency of response in Table 68.

The most frequent of the responses (28%) to this question identified local businesses as the greatest beneficiaries of oil sands development. In some cases, individual business were named but, most often, the general response was "local businesses". There was a

Table 68. "Who has benefitted most from oil sands development?"
grouped responses.

Responses specifying	Number of Responses	% of all responses
Local businesses and companies	202	27.7
Oil companies (and other larger outside companies)	92	12.6
Workers in general	81	11.1
Everyone (the province, consumers, etc.)	69	9.4
Government, politicians	66	9.0
Elites (company executives, land- owners, developers, etc.)	64	8.8
The town itself	53	7.3
Employees of the oil companies	37	5.1
Other (widely differing) responses	66	9.0
TOTAL	730	100.0

fairly strong and widespread feeling that some local entrepreneurs had done very well financially, providing goods and services to the large influx of new residents. This finding is supported by the agree-disagree responses to the various statements about Fort McMurray used in a different part of the interview schedule. On a scale of 1 to 100, where 100 indicates very strong agreement, the average rating for the statement "Private businessmen here are making a killing" was 71. The mean score for "Overall political-economic control of Fort McMurray rests in the hands of a few prominent business people" was 75. There is a clear pattern of agreement with the idea that local businessmen have made a killing.

Van Dyke and Loberg (1978:52) reported the perceptions of 1975-76 residents of Fort McMurray who felt that about 10 businessmen really controlled the town. Although a precise count of local beneficiaries of development is not possible, strong agreement with the idea that local businessmen are doing well for themselves, is found in this survey data. Fort McMurray is not the only resource development community which has experienced this situation. Barclay et al. (1974) suggest that a frequent complaint in single-industry communities is the lack of competition among retail facilities.

The second most frequently identified beneficiaries were the oil companies (including other large companies, such as Canadian Bechtel, involved in the oil sands development). About 13% of the responses could be classified in this group. It is interesting that over twice as many responses identified local businesses rather than oil companies as the prime beneficiaries of development. Information is obviously not available to objectively determine which group has benefitted the most. However, residents of Fort McMurray are in constant financial contact with local businesses. Even if the oil companies are making a larger profit, it is the profit made by local businessmen of which Fort McMurray residents are most aware. A majority of respondents (51%) agreed that "the companies are generous with their donations to the community". About 40% agreed that "the oil companies are responsible for a lot of pollution". In general,

attitudes towards the town's major employers appear to be fairly positive.

Workers in general (tradesmen, construction workers, etc.) were identified as important beneficiaries in 11% of the responses to this question. This response probably reflects the fact that oil sands development has created a reasonable number of jobs. Employees of the oil companies were specified in a further 5%. The average agreement score on the statement "You really have an easy time financially if you're working for the big companies" was 6.0. There is not a clear consensus in Fort McMurray that employment with the oil companies means "an easy time" financially. The relatively low agreement score on this attitudinal statement, and the lower percentage of responses to the "who benefits most?" question, demonstrate that, overall, there is a feeling that local businessmen and the oil companies still benefit more than do oil company employees.

The government (and politicians) were named in 9% of the responses to this question. Company executives, land-owners, and land developers and speculators make up another 9% of the responses. A sizeable portion of this sample of Fort McMurray residents feel that there are political and economic elites who have benefitted handsomely from the development of the oil sands. It is difficult, however, to explain what is meant by the response "The government has benefitted the most". Four respondents felt that Alberta Housing was profitting, but most of the remaining responses in this category are rather vague. Perhaps, respondents felt that the government was benefitting from oil royalties. If this is the case, these responses are much more like "everyone benefits". About 9% of the responses did state that "everyone benefits" (or something of a similar sentiment). A further 7% identified the town of Fort McMurray as the major beneficiary.

12.1.2 Who Benefits Least?

The open-ended question about who had benefitted most from oil sands development was followed by the second question: "Who has benefitted least?" Again interviewers were instructed to record up

to three answers. The distribution of responses to this question suggests that respondents had more difficulty thinking about development in negative terms. Only 338 responded with even one answer (compared to 391 for the "who benefits most" question). A total of 101 respondents named two groups which they thought had benefitted least, and only 22 added a third group (compared to 245 and 94 for the first question). In total there were only 63% as many responses to the negative part of this question as there were to the positive (461 versus 730). Coding required 58 discrete categories. The fact that considerably fewer responses required more codes suggests that there was greater variance in responses to the "who benefits least" question. This conclusion is supported by results reported in Table 69. Twelve response categories account for 85% of all responses. By comparison, 91% of the responses to the "who benefits most?" question could be grouped into eight broad response categories (Table 68).

The native population of the Fort McMurray area was the group most often identified as having benefitted least from oil sands development. Of the 461 responses, 102 (22%) fall into this category. This is a particularly high level of concern about the area's native population. When prompted to think about the beneficiaries of development, Fort McMurray residents are quite likely to conclude that Indians and Metis have benefitted relatively little. This survey of randomly-selected community residents can give us little objective information about the benefits of development received by the native population. Too few members of this group (16 in total) appeared in the sample. The average 1978 total household income of this group was however, significantly lower than the average for the rest of the sample (Section 7).

Van Dyke and Loberg (1978:48), summarizing the views of their 1976 Fort McMurray respondents, wrote that "Old-timers who never made it in the boom are having difficulty coping with the inflated cost of living created by the explosive development". A reasonable number of 1979 residents of the community still hold this

Table 69. "Who has benefitted least from oil sands development?"
grouped responses.

Responses specifying	Number of Responses	% of all responses
Native population	102	22.1
Original residents of Fort McMurray	68	14.8
No one benefits least	47	10.2
Poor/lower paid/unskilled	36	7.8
The people of Fort McMurray	31	6.7
Workers in general	30	6.5
Children/youth/families	20	4.4
People not employed by oil companies	18	3.9
Everyone has benefitted least	13	2.8
Small businesses	12	2.6
The elderly	8	1.7
Public employees	8	1.7
Other (widely varying) responses	68	14.8
TOTAL	461	100.0

opinion. The second largest response category for this open-ended question (15%) involved the "original residents" of Fort McMurray. Some Fort McMurray residents appear to think that the better jobs and living accommodations tend to have gone to the higher status newcomers to the town. These subjective evaluations receive some support from earlier analyses where it was found that respondents who had been resident in the town since before the latest development boom did have noticeably lower incomes (Section 7). Since the native population is, obviously, the original population of the area, the combination of the two highest categories results in 37%. Over one third of all responses to the "who benefits least?" question identify the pre-development population of the area as the least likely to have benefitted. In this sense, many residents are of the opinion that Fort McMurray is not a single-industry town where the introduction of that industry has been financially beneficial to original (long-time) residents. In Fort McMurray, the introduction of the oil sands industry brought with it most of the current residents of the community. They have benefitted but, popular opinion has it, the original residents have not.

About 10% of the responses are of the "no one benefits least" variety. There is a minority, but one of noticeable size, which feels that development has been equally beneficial to all. Roughly the same proportion of responses to the "who benefits most?" question (9%) contained the "everyone benefits" sentiment (Table 68). However, there is also a small group of responses (3%) which state that everyone has benefitted least or, in other words, "no one has benefitted". A further 7% of the answers identified "the people of Fort McMurray" as the prime losers. Although the answer "everyone" has a broader focus than does "the people of Fort McMurray", the two groups could probably be combined into a "no one benefits" response group. If this is done, roughly the same proportion of responses are found in the very positive "everyone benefits" category (10%) as in the very negative "no one benefits" category (10%).

Of all 461 responses, 7% indicated that workers in general had benefitted the least. Perhaps the implicit sentiment is that the oil companies had benefitted more than the workers employed by the oil companies. About 4% of all responses were more explicit. They identified workers not employed by the oil companies. These survey results show this to be an accurate perception. Total 1978 household income for those households with a member employed by an oil company is about \$8000 higher than for all other households (Section 7). Even if the "non-oil company" and "unskilled/lower paid" categories are combined, only 12% of all responses are found in this more general response category. Relatively few respondents volunteered opinions that show an awareness of this difference.

Twenty of the responses to this question (4%) listed children, young people, or families as the least likely to have benefitted from oil sands development. In a different part of the interview schedule, little agreement was found with the statement "There is lots for teenagers to do in this town" ($\bar{x}$ = 42 on a 100-point scale). Also, there is relatively strong agreement with "Family breakdown is common around here" ($\bar{x}$ = 78) and "Marital infidelity is common around here." ($\bar{x}$ = 71). It is likely, therefore, that the respondents identifying youth or families as the least benefitted were expressing the fairly common feeling that family life in Fort McMurray leaves something to be desired.

Finally, three other response categories are listed in Table 69. Small businesses were considered the major losers in three of the cases while the elderly and public employees each comprise two of all responses to the "who benefits least?" question.

Summarizing the results displayed in Tables 68 and 69, it can be seen that some respondents insisted on looking at the issue of resource development and benefits from a different perspective than that suggested by the two questions. About 37% of the answers given to the "who benefits most?" question were of the "everyone/the town itself/workers/government" variety. Conversely, almost 10% of the responses given to the negatively phrased question flatly stated that no one had really benefitted.

About 40% of the responses to the "Who benefits most?" question pointed at local businesses and oil companies. Slightly less than 40% identified natives and long term residents of Fort McMurray as the group having received the fewest benefits of development. The amount of community consensus on the benefits received by these two groups is clearly higher than for all other groups identified.

12.2 RESPONDENTS' SUGGESTIONS FOR IMPROVEMENTS

To invite comments about the quality of services and general municipal management in Fort McMurray, respondents were asked: "In what ways do you think physical planning in Fort McMurray could be improved?" Interviewers were instructed to record up to three suggestions, if that many were forthcoming. A total of 389 of the 430 respondents in this survey (90%) had at least one suggestion for planning improvements. About 68% (294) added a second suggestion, and 176 (41%) went on to list a third change they felt would be an improvement. Some of the responses were not worded in the form of suggestions for change but, rather, simply as complaints about specific problems.

The total of 857 suggestions or complaints were systematically coded in 81 categories. Inspection of the response distributions of the three suggestions revealed that they failed to differ systematically. That is, responses that appeared frequently as first suggestions were also likely to appear frequently as second and third suggestions. Consequently, the three distributions were combined into one. The 857 suggestions and complaints are divided into six major categories which, in turn, encompass 34 minor categories (Table 70).

Problems with roads and transportation and suggestions about what could be done to reduce the problems dominated the responses to this question. Over one-third of the responses fit this category. Complaints about the quality of roads within the town were heard most frequently (128 comments). Within the roads and transportation category, the second most common complaint was

Table 70. Respondents' suggestions for improvements.

Suggestion	Number of Responses	% of all responses
ROADS & TRANSPORTATION		
Roads; construction and maintenance/potholes	128	
Street layout, traffic control, etc.	55	
Bus services within town	37	
Parking facilities (mainly downtown)	36	
Highway 63 (access, lights, upkeep, etc.)	30	
Sidewalks (and streetlights)	28	
Other N.O.C.	10	
Sub-total	324	37.7
AESTHETIC APPEARANCE OF TOWN		
More parks (and better urban landscaping)	76	
Layout of town is too spread out	34	
General clean-up; too much litter	21	
Sub-total	131	15.3
MEDICAL, SOCIAL & RECREATIONAL SERVICES		
More recreation facilities	79	
Better school services	14	
Better/more entertainment	13	
Better medical services	7	
Better social services (welfare, daycare)	7	
Sub-total	120	14.0

continued . . .

Table 70. Concluded.

Suggestion	Number of Responses	% of all responses
GOVERNMENT, PLANNING & COORDINATION		
More long-range planning; set priorities, etc.	53	
It's as good as you could expect	20	
More citizen participation in planning	11	
It's too late to repair the damage	11	
More consultation between gov't departments	6	
Other H.O.C.	12	
Sub-total	113	13.2
COMMERCIAL & MUNICIPAL SERVICES		
Snow and ice removal (flood control)	22	
More downtown retail outlets	17	
More suburban retail outlets	16	
Garbage; sewage, electricity; fire protection	11	
Animal control	9	
Downtown too large and spread-out	7	
Other H.O.C.	3	
Sub-total	85	9.9
HOUSING		
Better and more adequate housing (general)	26	
Lots too small; buildings too close together	17	
Cheaper housing	14	
Less multiple family housing	12	
Neighbourhood designs (e.g., location of trailers)	9	
Specific complaints re: Alberta Housing, company housing	6	
Sub-total	84	9.8
TOTAL	857	99.9

about traffic control problems due to (absent) traffic lights and general lay-out of streets in the downtown area. Several respondents noted that the funneling of all lower town traffic through one main street appeared to have been, in retrospect, an unwise planning decision. About the same number of comments suggesting that a town transit system would be useful (37) and that downtown parking was not completely adequate (36) were received.

Thirty comments focusing on Hwy 63 were made to interviewers. The majority of these specified problems of access to the highway from the various areas of town. Suggestions for change included traffic lights and access lanes. Sidewalks (absent or in disrepair) were mentioned 23 times, and the absence of street lights received an additional five comments. A further 10 widely differing specific comments about roads and transportation (including bus and air services) were made by respondents.

The high prominence of comments about roads and transportation (38% of all responses) reinforces the results of the analysis of service evaluations presented in Section 5. Streets and sidewalks were evaluated much more negatively than other services. With the exception of the traffic-funneling effect created by the lay-out of lower town streets, most of these problems could be reduced. As Fort McMurray continues to grow, the upkeep of streets and sidewalks will continue to be problematic. However, the problems of general traffic movement within the town (absence of public transit, inadequate downtown parking, and Hwy 63 access problems) can be expected to increase in severity as the population of the community increases.

Roads and transportation are clearly the major problem areas identified by the survey respondents. The remaining five categories of suggestions/complaints each contain about 10 to 15% of the total number of suggestions (Table 70).

More parks and better urban landscaping were the sentiments expressed in 76 of the respondents' suggestions. A further 21 responses had to do with generally cleaning up the town. Together, these two forms of negative aesthetic assessments of the town account

for about 11% of all opinions given to the planning improvement question. The inclusion under "aesthetic appearance of town" of the comment that the town is generally too spread out might be questioned. Whatever the case, 34 responses which expressed dissatisfaction with the "area" planning strategy adopted by town planners were received.

A sizeable proportion of the suggestions for planning improvements focused on the need for more recreational facilities. The 79 comments of this nature ranged from the very specific to the very general, and included suggestions for both indoor and outdoor facilities. About the same small number of responses (14 and 13, respectively) contained suggestions for improvements in school services and in entertainment possibilities (including restaurants).

A surprisingly small number (seven responses in each case) identified poor medical or social services. Van Dyke and Loberg (1978:79) concluded, on the basis of their 1975-76 study of Fort McMurray, that medical facilities were inadequate and that community members were dissatisfied with this state of affairs. Since the evaluation of services reported earlier revealed moderately high satisfaction with medical services, and since there were moderately few suggestions for improvement, it can be concluded that satisfaction with the quality of health care may have increased.

A total of 53 general comments about planning and community development were recorded. These included suggestions that more long-range planning should be done, priorities in development should be set before further development was undertaken, and that the whole process of development should be slowed down. The sentiment expressed in these comments is confirmed in another part of this study. About 62% of the sample agreed with the statement "There is a lack of coordinated planning around here". Only 36% agreed that "The provincial government has really helped this town's development". Twenty of the responses to the question about planning improvements simply stated that no improvements could realistically be expected. For a boom town of this size, things were as good as they could be expected to get.

Eleven "It's too late to repair the damage" type of answers were also recorded. One particularly dissatisfied respondent suggested the biggest improvement could be made with a bulldozer which would level the town before a new start was made. Of the remaining 18 answers that fall within the general government, planning, and coordination category, six mentioned the need for more consultation between government departments to avoid confusion and overlap of services, while the remaining 12 were basically unclassifiable.

Roughly 10% of the responses to the question about planning improvements could be classified under the title "commercial and municipal services". Snow and ice removal received 12 negative comments and there were 10 negative comments about flood control. Given the flooding experienced by the community only weeks before this survey began, the absence of a greater negative response is interesting. It is not simply that residents felt that the flood was beyond the control of local officials for, in the earlier analysis of municipal service evaluations, flood control was rated negatively (along with streets and sidewalks, and animal control). Since the flooding in the community did not directly affect the majority of the community residents, it may also not have become as serious a problem as the roads which everyone is forced to use. A question which directly mentions flood control will remind respondents of the earlier problems even if they had not been directly affected, whereas an open-ended question is not as direct a stimulus.

Suggestions for an increase in shopping facilities in the downtown area were recorded in 17 cases along with 16 suggestions for more shopping facilities in the suburbs. The combination of complaints about the various other utilities and municipal services (garbage, sewage, electricity, and fire protection) resulted in only 11 comments. There were nine further complaints about animal control, seven about the spread-out design of the downtown shopping core, and three comments that were unclassifiable. The analysis of service evaluations (Section 5) showed animal control rated as the lowest of all services listed. However, here we find only nine (1%) of

all responses identifying animal control as a problem. An article in the local paper, Fort McMurray Today (25 May 1979), described "Another child bitten by dog in Fort McMurray" and noted that there had been a large number of similar incidents in the previous weeks. The explanation of the different responses may be similar to the explanation given for suggestions on flood control. A question which mentions animal control specifically will remind respondents of stories that they have read or heard. An open-ended question will not elicit this response unless the respondent has been affected more personally by the problem.

Housing suggestions/complaints comprise the last category of responses listed in Table 70. Of the 84 comments in this category, 26 were of the general "we need better housing, with more variety" type. Seventeen complaints about small lots and crowding of buildings were received, along with 12 about the over-abundance of multiple family housing units. Fourteen complaints about the high cost of housing in Fort McMurray were also recorded. The remaining six responses in this category were specific complaints about Alberta Housing and various company housing developers. Considering the low quality ratings given to housing (Section 4), these suggestions comprise a relatively small proportion of the total. This supports our inference that housing problems may be largely neighbourhood problems.

12.3 SUMMARY

The two groups most frequently named as major beneficiaries of oil sands development were local businesses (28% of all responses) and the oil companies (13%). The relatively high cost of living in Fort McMurray may be responsible for the somewhat more negative attitudes towards the former group. Overall, a sizeable portion of the sample felt that some groups had benefitted more than others. A somewhat smaller number of respondents suggested a fairly equal distribution of benefits.

The responses to the "who has benefitted least?" question were fewer and more varied. The native population and the original residents of Fort McMurray were those most frequently identified as benefitting least from oil sands development. Again, a minority of respondents replied that benefits had not been distributed unequally.

In response to an open-ended question asking for suggestions for planning improvements, respondents reemphasized their earlier negative evaluations of certain municipal services. Problems with streets and roads and suggestions for their improvement were most prominent (38% of all responses to this question). More parks and better urban landscaping, more recreational facilities, better housing, and criticisms of urban planning in general were some of the other major suggestions and complaints.

13. A STUDY OF HUMAN ADJUSTMENT IN THE FORT McMURRAY AREA:
SUMMARY

13.1 INTRODUCTION

The general objectives of this project were to describe and analyze the social and personal adjustment of people to the current and past conditions of life in Fort McMurray. An attempt has been made to examine, in retrospect, the social impact of the development of two large oil sands extraction plants: Suncor (originally the Great Canadian Oil Sands plant), built between 1963 and 1968, employing 1800 workers and producing about 50 000 barrels of synthetic crude per day; and Syncrude, built between 1973 and 1978 with an operating labour force of about 3000 and a design capacity of 125 000 barrels of synthetic crude.

Four analytical methods have been used to create a dynamic baseline from the results of the 1979 AOSERP survey of the adult population of Fort McMurray: (1) comparisons of survey results with results from Edmonton, Alberta, and Canada as a whole; (2) use of Matthiasson's 1969 survey of Fort McMurray to generate cross-sectional comparisons across time; (3) analysis of migration cohorts (adults who came within a particular period and stayed); and (4) analysis of individual change based on recall data. The social indicators selected emphasized outputs of the human adjustment process: demographic composition and differential population stability, the (perceived) quality of housing and services, labour force activity, incomes and standard of living, social participation and social support (particularly within the family), and individual subjective reactions to life in Fort McMurray.

These methods and indicators are used in an attempt to study social change after it has happened, but without adequate measurement prior to or during development. At best, such efforts are speculative. However, given the large scale rapid changes that have occurred in the study area, some such attempt is clearly necessary, particularly given the plans for a third plant (the Alsands project).

13.2 RESEARCH METHODS

The sample survey conducted face-to-face interviews with a sample of 430 randomly selected adults resident in Fort McMurray during June of 1979. The dwelling was used as the primary sampling unit. Dwellings were selected from each of the six areas of Fort McMurray using interval sampling. One adult was randomly selected from each dwelling. The survey design was patterned after Gene Summers' work in the U.S.A., and interview questions were designed to maximize comparability with the 1979 EAS and Matthiasson's 1969 survey of Fort McMurray. Questions were pretested in Fort McMurray and in Edmonton. There were 131 refusals accepted during the survey. No contact could be made in 63 dwellings. This yielded an overall completion rate of 69%. Of those contacted, 77% volunteered to answer the questions.

Retests conducted by telephone interviews showed high levels of accuracy for behavioural items, and acceptable levels of reliability even for the poorest of the attitudinal items. The sample appeared to be representative in terms of age, area of residence, housing tenure, industry, and household size when compared to the 1979 Municipal census of Fort McMurray. Apartment dwellers were under-represented, mobile home dwellers were slightly over-represented, and those living in single family housing were proportionately represented. The sample under-represented males. The reason for these difficulties appeared to lie in differences in contact rates rather than in different refusal rates.

13.3 DEMOGRAPHIC FACTORS IN SOCIAL IMPACT

Fort McMurray has grown rapidly from a town of 1200 in 1961 to a city of 26 000 in 1979. Its sex ratio of 112 males per 100 females is not particularly high compared to similar communities, but the population is relatively young (and has a high young dependency ratio). The community has maintained a high proportion of married adults throughout the 1970's (the construction of Syncrude)

and presently appears to be close to the Canadian proportion of about 0.75. Former Alberta residents comprise 41% of the sample, and those from other western provinces make up a further 22%.

The population has been highly mobile in the past, particularly those from urban backgrounds, the young, the single, those with smaller households, and those who moved to Fort McMurray from outside Alberta. About one-half of the adult population were relative newcomers (less than 2 years residence), a situation similar to that which existed in 1969 after the building of Suncor. In 1979, proportionately more residents (22% versus 12%) in the community had stayed after living through the building of the new plant. Community stability appeared to have increased, but the population was still relatively transient.

Those who lived in single family housing had been there 1.7 years longer as had those who owned their home (1.6 years longer). Residents of Waterways and Lower Town had lived in Fort McMurray longer than had residents of the newer areas, and those who had moved to Fort McMurray from outside Alberta had arrived about 1.6 years later. These were the major differences in length of residence. While married respondents had lived in Fort McMurray a shorter time than single respondents, policy relevant conclusions concerning turnover remain speculative without panel information (samples of movers and stayers).

13.4 HOUSING

Fort McMurray's housing stock has grown very rapidly and the housing mix has changed quite dramatically. From a situation before the building of Suncor where single detached dwellings comprised over 90% of the housing stock, apartments now comprise about 28%, other multiple family dwellings comprise 23%, and mobile homes comprise 20%. These trends began with the building of Suncor and continued with the building of Syncrude.

Despite employer subsidies (which 46% of the sample received), shelter costs are high (averaging \$356 per month). Subsidies were more likely to go to owners and those with higher incomes,

but relative newcomers were no more likely to be subsidized than those who came before 1978. Intra-urban mobility was high, as were changes in house type. Despite their short residence in the community, more than 60% had moved at least once within the town, and about two-thirds of these moves involved changes in house type.

The move to Fort McMurray itself involved even greater dislocation in housing patterns. About one third of the sample "gave up" single family housing in moving to Fort McMurray, and about one-sixth gained it. From an analysis of migration cohorts it was inferred that the probability of living in a mobile home on arrival in Fort McMurray dropped from 0.45 to 0.21 during the Syncrude construction boom. The probability of getting a single detached dwelling also decreased for the cohort that had come after 1977 (from 0.26 to 0.09). The probability of occupying a multiple family dwelling increased across all three cohorts. Cohort differences in house type mobility reflected both a decrease in the availability of single detached housing, and less opportunity (time) to move. The probability of eventually getting a single family dwelling was highest for those who arrived earliest (about 0.5), no matter what kind of housing they had when they came.

Respondents in single detached housing had lived in their residence longer, and those in mobile homes had lived there a shorter time than those who lived in multiple family housing. Home ownership and lower shelter costs appeared to be associated with greater stability, as did employment with Suncor or Syncrude. Residents of Lower Town and Gregoire Park showed the highest stability, all other things being equal. Older respondents and those with more household possessions also had lived in their dwellings longer.

Despite apparent improvement in housing stocks, there was little evidence of improvements in residents' "satisfaction" with their housing. Factors external to the dwelling, such as landscaping, space for children to play, privacy, space outside, and noise were judged to be of relatively poor quality by over one-third of the 1979 sample. Mobile home renters in Gregoire Park and Waterways and mobile home dwellers of all kinds in Lower Town (a total of 15%

of the sample) judged their housing to be of poor quality. So too did the 7% of the sample who rented townhouses and duplexes in Abasand. Apartment dwellers in Lower Town (a further 15% of the sample) rated their dwellings only marginally above the mid-point on the scale. Overall, over one-third of the sample reported generally poor housing, and 10% reported very poor housing. Differences in perceived housing quality were a function of perceptions of the environment (perceived neighbourhood satisfaction, better housing market position) and housing characteristics (single dwellings with more amenities were rated higher). Older respondents rated their dwellings higher but, other things being equal, those who had lived in their dwelling longer rated them lower.

13.5 COMMUNITY SERVICES

As was the case with the provision of housing, Fort McMurray has also encountered some service delivery problems. Hospital, emergency, and public health services are used frequently, Recreational activities which are not contingent on the provision of community facilities seem to be preferred. Generally, patterns of service use within the community are like those found in other urban settings.

The most frequently cited service-related problem was finding good entertainment (40%), but about one-third of the sample also cited getting a car fixed, finding specialized medical or dental treatment, finding good recreational activities, and dealing with vandalism, theft and juveniles. Abasand Heights residents were most likely to find this latter factor problematic. Finding household repairmen and cashing or writing a cheque had been problematic for about 20% of the sample, and only 7% said that borrowing money had been a problem.

While previous surveys reported that medical services were most in need of improvement, they were relatively highly rated in this survey. Flood control and animal control, as well as different aspects of the design and maintenance of streets and sidewalks all

received relatively negative evaluations by respondents. Those who had lived in other "isolated resource communities" evaluated services more negatively, perhaps reflecting higher expectations. Street repair and snow and ice removal received consistently poor ratings in all areas of town. Traffic lights were evaluated relatively positively in Thickwood Heights and relatively negatively in Abasand Heights. Sidewalks and back lanes were evaluated most negatively in Waterways and most positively in Beacon Hill. These ratings appear to have high validity.

13.6 WORKING IN FORT McMURRAY

Prior to the building of the two oil sands processing plants, Fort McMurray's economy was based on the transportation and communications industry. Fort McMurray remains a single industry town, but the concentration has shifted to the mining and oil sector. Both male and female labour force participation rates increased as the absolute size of the labour force grew dramatically. The proportion of the labour force made up of construction jobs rose and fell with construction booms around the building of each plant. Professional and technical jobs have increased in relative importance as the oil processing plants have become operational.

There is some evidence that workers with relatively unstable employment histories are attracted to Fort McMurray. Such histories are over-represented among young males without post-secondary education. These individuals may not remain in the community long. Men were less likely than women to be unemployed prior to moving to Fort McMurray, and more likely to have a job arranged when they came. If not, they were more likely to have found one immediately. A considerable amount of individual upward or downward occupational status mobility has been associated with the move to Fort McMurray, even though the average amount of mobility is small. Better educated workers and those employed by Suncor or Syncrude are more likely to have experienced upward mobility.

Working overtime is commonplace in Fort McMurray, but holding a second job is not. Job-search behaviour appears to be moderate.

13.7 INCOMES AND STANDARD OF LIVING

Incomes in Fort McMurray are considerably higher than the Canadian, Albertan or Edmonton average. Average household incomes for 1978 were about \$24 500. Indirect evidence suggests that Fort McMurray residents do not receive high incomes because they are a select group of workers (highly skilled, long work experience). Their incomes appear to increase after they move to Fort McMurray. Men make much more money than women, and the better educated, the "middle" aged (35 to 44) and those working for the oil companies report higher incomes. Those who are relatively old in Fort McMurray terms (over 44) and those who were living in the community prior to the construction of Syncrude have somewhat lower incomes than younger, more recent arrivals in the community. Low average incomes are reported by single parents and native Indians, but their small numbers in the sample make estimates unreliable.

In this community where incomes are generally high, the differences in income which can be attributed to education are minor. Controlling for sex, age, job seniority, and the number of months employed in 1978, education does not have a significant effect on income. Oil company employees get more fringe benefits than public sector employees, and both these groups receive better benefit packages than the rest of Fort McMurray's workers.

Standards of living are fairly high, but household "luxury" possessions are not particularly widespread (perhaps because of the youth and short residence of many of the people in the sample). The level of debt reported varies considerably, with approximately one third of the sample reporting no non-mortgage debt. Respondents with higher incomes and standards of living report more debt, but the proportion of debt to income decreases as income increases. Longer term residents report higher debts, even when adjustments are

made for income and age. This suggests that there may be something about living in Fort McMurray itself (higher stability or higher consumption) which leads to the accumulation of debts.

13.8 THE QUALITY OF EMPLOYMENT

A moderate level of job satisfaction is exhibited by the currently employed members of the sample. About three-fifths of the currently employed said they would take the same job again (about the same as national results). Slightly less than one-half said that they would strongly recommend their job to a friend. This is lower than the 60% who said they would so so in a 1974 national survey.

However, contrary to popular stereotypes (held by residents of resource communities as well as others), Fort McMurray workers differ little from Canadian workers in their attitudes towards making money. About one-third indicated that they would take any job if they were paid well for it. The relatively unstable work histories of Fort McMurray workers do not seem to have lowered general commitment to the work ethic. Like the rest of the Canadian labour force, they show a moderate amount of "alienation".

The more complex the job, and the less repetitious the work, the more satisfying the job was reported to be. People who received more fringe benefits and those who had lived longer in the community were more satisfied with their jobs. Workers may get better jobs over time, they may adjust their expectations, or the dissatisfied may leave in disproportionate numbers. While there is no evidence of negative effects of development in these results, oil company employees reported lower job satisfaction even after adjustments were made for other relevant factors. Specifically, it appears that the more highly educated and best paid workers were more dissatisfied with their jobs.

Reanalysis of Matthiasson's 1969 data leads to the conclusion that job satisfaction has increased slightly over the decade. Also, while longer term residents reported less satisfaction than

newcomers in 1969, the opposite was true in 1979. The longer a respondent had lived in Fort McMurray, the more job satisfaction he or she reported. This corroborates the conclusion that conditions have improved.

13.9 SOCIAL PARTICIPATION

Despite the high mobility associated with rapid growth, participation in social networks shows little signs of negative impact. Residents of Fort McMurray are not socially isolated. Nor are they without the same kinds of connections to voluntary associations, neighbours and friends that other urban residents report. Social participation of all kinds appears to increase rapidly after arrival in Fort McMurray. People who had lived longer in their neighbourhoods were better integrated into neighbourhood networks despite "setbacks" that probably involved neighbours moving away.

Households where someone was employed by Syncrude or Suncor were no better integrated into either organization life or friendship networks than other residents of Fort McMurray. Respondents from "oil company households" did know more neighbours, even if they did not interact with them any more often. This is probably a function of a common employer, subsidized housing, and common transportation to work. Other differences in social participation within Fort McMurray were primarily those common to any population.

13.10 FAMILY LIFE

Over 70% of the respondents in this survey agreed that family breakdown is common in Fort McMurray, and over one-half agreed that marital infidelity is common. In other words, they share the opinion of experts in the helping professions. However, when the quality of life reported by the respondents was examined, families appeared to adjust well to the circumstances they find in Fort McMurray.

The proportion of the sample who were married (or living common law) is similar to that for Alberta while household size is somewhat larger (more children). This is understandable given the relative youth of the population. There is no evidence of lower fertility in Fort McMurray and people appear to be having and planning families similarly to the population in the rest of Alberta and Canada.

Married respondents appear much more likely than their Edmonton counterparts to live in mobile homes and in duplex/townhouse accommodation. Even so, the quality of family life is high in Fort McMurray with little evidence of negative impact. The relatively low ratings (averaging 60 out of 100) of Fort McMurray as a place to establish a permanent home did not appear to affect satisfaction with family life (averaging 84 out of 100). Length of residence in Fort McMurray had little effect on family satisfaction. Compared to relative newcomers, people who had lived in the community a long time did not feel that it was a better or worse place to establish a permanent home.

About one-half of the married respondents had come for an exploratory visit and, in one-half of those cases, wives had come as well as husbands. Nevertheless, 60% of the respondents reported that the decision to move was a joint one. If there were any effects of joint decision-making on family satisfaction, they were transitory. Kin contact with relatives outside Fort McMurray had no effect on family satisfaction, no matter how long people had lived in the community. However, interaction with relatives within the community did have a positive effect for those who had lived in the community a relatively short period of time. Local kin contact appears to help families settle into the community, but after that other contacts may become more important.

Almost 70% of the married respondents felt that there were problems in finding activities for teenagers, and about 35% indicated problems with getting babysitting or daycare. The latter was particularly problematic for those parents who lived in apartments. Few

respondents (10%) reported that interaction with their children had decreased after the move to Fort McMurray, and 38% said that it had increased. An increase in interaction with children was positively associated with satisfaction with family life.

While 70% of the sample reported often doing things with their children, only 40% reported that they and their spouse got out together alone very often. Respondents were just as likely to report that their interaction with their spouse had changed as not changed (on moving to Fort McMurray), and about one-half the changes were for the better and about one-half were for the worse. The more interaction between the marital partners, the greater the satisfaction with family life and the more positive their attitudes towards the community.

13.11 INDIVIDUAL EVALUATIONS OF LIFE IN FORT McMURRAY

Problems with entertainment and recreation in Fort McMurray show up again in ratings of satisfaction with non-work activities. Problems with housing are indicated by relatively low satisfaction with neighbourhoods. Both were significantly lower in Fort McMurray than in Edmonton. However, satisfaction with family life was no higher in Edmonton, and satisfaction with standard of living and friendships was higher in Fort McMurray.

Compared to respondents to the 1979 EAS, those in the 1979 AOSERP survey of Fort McMurray reported somewhat more frequent positive emotions and few negative feelings (depression, boredom, or loneliness). There is no evidence that the psychological orientations of Fort McMurray residents have been negatively affected by rapid development. Still, as is probably the case generally, female respondents not active in the labour force and those respondents with fewer formal and informal social contacts have higher negative affect scores. However, length of residence in the community and negative affect are not significantly related. There is only weak evidence in support of the "cabin fever" hypothesis -- the proposition that unemployed women in communities like Fort McMurray feel depressed or trapped.

Fort McMurray residents are very satisfied and optimistic about their financial situation, although long term residents are less likely to report financial improvements in the past year. Older respondents are more satisfied with their standard of living, but less optimistic about improvements in the future. Finally, workers for Suncor and Syncrude are more likely to report financial improvements over the past year. In brief, financial satisfaction and optimism are generally high, and those who have higher income and standards of living tend to report above average satisfaction.

13.12 RESIDENTS' OPINIONS AND SUGGESTIONS

The most common opinion among respondents was that local businesses and the oil companies had benefitted most from development. Somewhat fewer respondents suggested a fairly equal distribution of benefits. Opinions about groups that had been "left out" were fewer and more varied. However, the native population and the original residents of Fort McMurray were those most frequently identified as benefitting least from oil sands development.

In suggesting improvements, respondents re-emphasized their negative evaluations of certain municipal services. Problems with streets and roads were prominent (38% of all responses), as were suggestions concerning more parks, better urban landscaping, more recreational facilities, better housing, and improved urban planning.

14. SUGGESTIONS FOR FURTHER RESEARCH

14.1 INTRODUCTION

In this report, an attempt has been made to introduce several analytical methods that allow the study of social change from a single cross-sectional survey. An effort was also made, through re-analysis of Matthiasson's 1969 data, to use as much previously collected data as possible. The combination of this early data base and the 1979 AOSERP survey results allowed a limited cross-sectional comparison. It was limited in the sense that only some parts of the 1969 survey were considered useful enough for replication in the 1979 data collection. It was a cross-sectional comparison to the extent that both samples represented the populations of Fort McMurray at a particular time. Unfortunately, there was no identificational information included with the Matthiasson survey so that individuals could be traced and reinterviewed in a panel design. This, however, is common practice in standard surveys not designed for replication. Given these limitations, available comparisons in the present report provide only examples of what could be done with a full replication of the survey.

The preliminary longitudinal design outlined below presents brief proposals for two kinds of follow-up studies. The first of these is a short term panel study (Panel II) aimed primarily at analyzing turnover (Table 71). The second is a longer term repetition of the cross-sectional survey of 1979, accompanied by another broader panel (Panel III). These measurements are critical for a long term assessment of the social impact of oil sands development. A single study at one point in time simply cannot adequately analyse change. Repeated surveys are necessary for any attempt at monitoring conditions. Research design and measurement should remain relatively unchanged for replications and data collection should be designed to cumulatively add information to a respondent's record.

Table 71. Samples and panels in a longitudinal design.

	1969	1979	1981 (Spring)	1984	1989
Sample	Matthiasson	AOSERP I		AOSERP II	AOSERP III
Panel from AOSERP I 1979		(PANEL I)	AOSERP I, PANEL II	AOSERP I, PANEL III	AOSERP I PANEL IV
Panel from AOSERP II 1984					AOSERP II PANEL V

14.2 PANEL II: MOBILITY (1981)

One of the critical questions in the development of northern resource communities such as Fort McMurray is the problem of turnover. High rates of both in-migration and out-migration create problems for individuals in terms of stress, for service agencies in terms of an unstable clientel, for employers in hiring and training new personnel, and for the community generally in terms of non-participation and apathy. Yearly municipal censuses fail to include those that come and stay less than a year when that period is between census dates (1 June of each year). The estimation and analysis of turnover rates would, therefore, be the main goal of a follow-up panel study which attempted to recontact all respondents to the 1979 survey.

In order to facilitate follow-up studies, respondents in the 1979 survey were asked for their names, telephone numbers, and for the name, address, and telephone numbers of both a close friend and a relative. The purpose of this information was to allow future contact. These names were not included as part of the data set given to AOSERP, since respondents were assured complete confidentiality for their responses.

Panel II would be implemented by first attempting to re-contact all the respondents to the 1979 survey at their Fort McMurray addresses. This would be done on the telephone or in person where telephone numbers were not available. Even where the individual had not given their name or phone number, an interviewer would return to the address and attempt to ascertain the location of the respondent to the 1979 survey. If the respondent was still living in Fort McMurray, a brief (20 min) interview would be used to update selected indicators from the study. Here the focus would be on occupational changes, change in formal and informal participation, marital adjustment (where appropriate), attitudes towards the community, and the quality of health, housing and services. Since a good deal of background information is already available for these individuals, analysis could take advantage of this fact when the additional data was added to the file.

In order to follow those in the panel who had changed residence within Fort McMurray or who have moved out of the community entirely, the names and addresses of the friend and the relative given in the 1979 interview would be utilized. In all cases, the follow-up would ask for an update of this information when the respondent was eventually successfully contacted.

Telephone calls would be placed to the friend and relative (if necessary) asking for the respondent person-to-person. If they could help locate the respondent, a long-distance interview would then be conducted with the respondent focusing on reasons for moving, their new job and new housing, and post-mobility evaluation of their experience in Fort McMurray.

If respondents could not be traced through the means described above, two additional strategies are possible. One involves enquiries at the post office, A.G.T. and with the respondent's employer (if applicable) in an attempt to trace the respondent. A second line of inquiry involves asking neighbours for the same information. All of these strategies should help to locate a large enough sample of the 1979 panel that had moved since the original survey. In order to further facilitate co-operation with the survey, a brief three to four-page summary of study results should be sent to all respondents as soon as possible. This mailing could include postal change-of-address cards to aid in future contact of respondents.

14.3 FUTURE PANEL AND CROSS-SECTIONAL SURVEYS

In order to monitor social change in the study area so as to investigate human adjustment to development, the longitudinal aspects of the study should tentatively be planned to continue with a further panel (Panel III) at the height of the Alsands construction project (estimated at 1984). The design for this panel study would be much like the one outlined above (Table 71). Again, those respondents contacted in Fort McMurray would be re-interviewed to update information on housing, occupations, various aspects of the

quality of life (housing, health, services), attitudes towards the community, and attitudes towards changes that had occurred in the previous couple of years. Indicators could be chosen to address topics identified in the first two panel studies, and new topics could be added as appropriate.

The information collected in these panel surveys would allow the study of changes that occur to individuals. The analytical design uses the individual as his or her own control in examining alterations in characteristics. In addition, individuals could be asked to react directly to events (changes) that have occurred in the development of the oil sands over the intervening period. Brief follow-up interviews also could be completed with people who had left Fort McMurray to develop comparisons between movers and stayers, and to study reasons and circumstances surrounding turnover. Such panels could be continued indefinitely, although they are usually limited in the design sense by sample mortality. Given the predominance of young people in Fort McMurray today, the attrition from actual mortality would probably be slight, even over a 10 year period that might include a fourth panel survey. The latter survey might be timed to coincide with a period just after the completion of the Al sands plant. However, given a fairly high rate of out-migration from Fort McMurray, sample attrition due to geographic mobility would be high. Assuming that the study would follow those who left the community, this would only become a serious problem when the proportion of movers (in the total original panel) became very high. However, this problem could be approached by starting a series of panels (described below), each based on a cross-sectional survey.

Along with the panel study (at the same time as Panel III), a second cross-sectional sample of the adult population could be interviewed (Table 71). The methodology for this study would duplicate that used in the 1979 survey. This new sample (Sample II) would be necessitated by the fact that the population of Fort McMurray would probably have changed considerably since 1979. A

sample chosen in 1979, even if it was a representative sample of the population at that time, would not be representative of the population at future times. The information collected from this second sample could then be compared to that collected in 1979 to determine what kinds of overall change had occurred in the intervening period. The kind of comparisons that could be made are illustrated by the comparison of results from Matthiasson's 1969 survey with those of the 1979 survey. Interview instruments would be designed to maximize these comparisons, but they could also be modified according to the experience of earlier surveys.

This part of the design could be replicated again at the end of the Alsands construction phase (at the same time as Panel IV). This would provide Sample III. If it was found that attrition was very high in the periods between Panels I, II, and III, it would be advisable to carry the second sample forward as a separate panel. Over the 10 year design outlined here, this would be Panel V. It would be collected at the same time as Panel IV and Sample III.

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16. LIST OF AOSERP RESEARCH REPORTS
1. AOSERP First Annual Report, 1975
2. AF 4.1.1 Walleye and Goldeye Fisheries Investigations in the Peace-Athabasca Delta--1975
3. HE 1.1.1 Structure of a Traditional Baseline Data System
4. VE 2.2 A Preliminary Vegetation Survey of the Alberta Oil Sands Environmental Research Program Study Area
5. HY 3.1 The Evaluation of Wastewaters from an Oil Sand Extraction Plant
6. Housing for the North--The Stackwall System
7. AF 3.1.1 A Synopsis of the Physical and Biological Limnology and Fisheries Programs within the Alberta Oil Sands Area
8. AF 1.2.1 The Impact of Saline Waters upon Freshwater Biota (A Literature Review and Bibliography)
9. ME 3.3 Preliminary Investigations into the Magnitude of Fog Occurrence and Associated Problems in the Oil Sands Area
10. HE 2.1 Development of a Research Design Related to Archaeological Studies in the Athabasca Oil Sands Area
11. AF 2.2.1 Life Cycles of Some Common Aquatic Insects of the Athabasca River, Alberta
12. ME 1.7 Very High Resolution Meteorological Satellite Study of Oil Sands Weather: "A Feasibility Study"
13. ME 2.3.1 Plume Dispersion Measurements from an Oil Sands Extraction Plant, March 1976
- 14.
15. ME 3.4 A Climatology of Low Level Air Trajectories in the Alberta Oil Sands Area
16. ME 1.6 The Feasibility of a Weather Radar near Fort McMurray, Alberta
17. AF 2.1.1 A Survey of Baseline Levels of Contaminants in Aquatic Biota of the AOSERP Study Area
18. HY 1.1 Interim Compilation of Stream Gauging Data to December 1976 for the Alberta Oil Sands Environmental Research Program
19. ME 4.1 Calculations of Annual Averaged Sulphur Dioxide Concentrations at Ground Level in the AOSERP Study Area
20. HY 3.1.1 Characterization of Organic Constituents in Waters and Wastewaters of the Athabasca Oil Sands Mining Area
21. AOSERP Second Annual Report, 1976-77
22. Alberta Oil Sands Environmental Research Program Interim Report to 1978 covering the period April 1975 to November 1978
23. AF 1.1.2 Acute Lethality of Mine Depressurization Water on Trout Perch and Rainbow Trout
24. ME 1.5.2 Air System Winter Field Study in the AOSERP Study Area, February 1977.
25. ME 3.5.1 Review of Pollutant Transformation Processes Relevant to the Alberta Oil Sands Area

26. AF 4.5.1 Interim Report on an Intensive Study of the Fish Fauna of the Muskeg River Watershed of Northeastern Alberta
27. ME 1.5.1 Meteorology and Air Quality Winter Field Study in the AOSERP Study Area, March 1976
28. VE 2.1 Interim Report on a Soils Inventory in the Athabasca Oil Sands Area
29. ME 2.2 An Inventory System for Atmospheric Emissions in the AOSERP Study Area
30. ME 2.1 Ambient Air Quality in the AOSERP Study Area, 1977
31. VE 2.3 Ecological Habitat Mapping of the AOSERP Study Area: Phase I
32. AOSERP Third Annual Report, 1977-78
33. TF 1.2 Relationships Between Habitats, Forages, and Carrying Capacity of Moose Range in northern Alberta. Part I: Moose Preferences for Habitat Strata and Forages.
34. HY 2.4 Heavy Metals in Bottom Sediments of the Mainstem Athabasca River System in the AOSERP Study Area
35. AF 4.9.1 The Effects of Sedimentation on the Aquatic Biota
36. AF 4.8.1 Fall Fisheries Investigations in the Athabasca and Clearwater Rivers Upstream of Fort McMurray: Volume I
37. HE 2.2.2 Community Studies: Fort McMurray, Anzac, Fort MacKay
38. VE 7.1.1 Techniques for the Control of Small Mammals: A Review
39. ME 1.0 The Climatology of the Alberta Oil Sands Environmental Research Program Study Area
40. WS 3.3 Mixing Characteristics of the Athabasca River below Fort McMurray - Winter Conditions
41. AF 3.5.1 Acute and Chronic Toxicity of Vanadium to Fish
42. TF 1.1.4 Analysis of Fur Production Records for Registered Trappers in the AOSERP Study Area, 1970-75
43. TF 6.1 A Socioeconomic Evaluation of the Recreational Fish and Wildlife Resources in Alberta, with Particular Reference to the AOSERP Study Area. Volume I: Summary and Conclusions
44. VE 3.1 Interim Report on Symptomology and Threshold Levels of Air Pollutant Injury to Vegetation, 1975 to 1978
45. VE 3.3 Interim Report on Physiology and Mechanisms of Air-Borne Pollutant Injury to Vegetation, 1975 to 1978
46. VE 3.4 Interim Report on Ecological Benchmarking and Biomonitoring for Detection of Air-Borne Pollutant Effects on Vegetation and Soils, 1975 to 1978.
47. TF 1.1.1 A Visibility Bias Model for Aerial Surveys for Moose on the AOSERP Study Area
48. HG 1.1 Interim Report on a Hydrogeological Investigation of the Muskeg River Basin, Alberta
49. WS 1.3.3 The Ecology of Macrobenthic Invertebrate Communities in Hartley Creek, Northeastern Alberta
50. ME 3.6 Literature Review on Pollution Deposition Processes
51. HY 1.3 Interim Compilation of 1976 Suspended Sediment Data in the AOSERP Study Area
52. ME 2.3.2 Plume Dispersion Measurements from an Oil Sands Extraction Plan, June 1977

53. HY 3.1.2 Baseline States of Organic Constituents in the Athabasca River System Upstream of Fort McMurray
54. WS 2.3 A Preliminary Study of Chemical and Microbial Characteristics of the Athabasca River in the Athabasca Oil Sands Area of Northeastern Alberta
55. HY 2.6 Microbial Populations in the Athabasca River
56. AF 3.2.1 The Acute Toxicity of Saline Groundwater and of Vanadium to Fish and Aquatic Invertebrates
57. LS 2.3.1 Ecological Habitat Mapping of the AOSERP Study Area (Supplement): Phase I
58. AF 2.0.2 Interim Report on Ecological Studies on the Lower Trophic Levels of Muskeg Rivers Within the Alberta Oil Sands Environmental Research Program Study Area
59. TF 3.1 Semi-Aquatic Mammals: Annotated Bibliography
60. WS 1.1.1 Synthesis of Surface Water Hydrology
61. AF 4.5.2 An Intensive Study of the Fish Fauna of the Steepbank River Watershed of Northeastern Alberta
62. TF 5.1 Amphibians and Reptiles in the AOSERP Study Area
63. ME 3.8.3 Analysis of AOSERP Plume Sigma Data
64. LS 21.6.1 A Review and Assessment of the Baseline Data Relevant to the Impacts of Oil Sands Development on Large Mammals in the AOSERP Study Area
65. LS 21.6.2 A Review and Assessment of the Baseline Data Relevant to the Impacts of Oil Sands Development on Black Bears in the AOSERP Study Area
66. AS 4.3.2 An Assessment of the Models LIRAQ and ADPIC for Application to the Athabasca Oil Sands Area
67. WS 1.3.2 Aquatic Biological Investigations of the Muskeg River Watershed
68. AS 1.5.3 Air System Summer Field Study in the AOSERP Study Area, June 1977
69. HS 40.1 Native Employment Patterns in Alberta's Athabasca Oil Sands Region
70. LS 28.1.2 An Interim Report on the Insectivorous Animals in the AOSERP Study Area
71. HY 2.2 Lake Acidification Potential in the Alberta Oil Sands Environmental Research Program Study Area
72. LS 7.1.2 The Ecology of Five Major Species of Small Mammals in the AOSERP Study Area: A Review
73. LS 23.2 Distribution, Abundance and Habitat Associations of Beavers, Muskrats, Mink and River Otters in the AOSERP Study Area, Northeastern Alberta
74. AS 4.5 Air Quality Modelling and User Needs
75. WS 1.3.4 Interim Report on a Comparative Study of Benthic Algal Primary Productivity in the AOSERP Study Area
76. AF 4.5.1 An Intensive Study of the Fish Fauna of the Muskeg River Watershed of Northeastern Alberta
77. HS 20.1 Overview of Local Economic Development in the Athabasca Oil Sands Region Since 1961.
78. LS 22.1.1 Habitat Relationships and Management of Terrestrial Birds in Northeastern Alberta

79. AF 3.6.1 The Multiple Toxicity of Vanadium, Nickel, and Phenol to Fish.
80. HS 10.2 & History of the Athabasca Oil Sands Region, 1980 to
HS 10.1 1960's. Volumes I and II.
81. LS 22.1.2 Species Distribution and Habitat Relationships of Waterfowl in Northeastern Alberta.
82. LS 22.2 Breeding Distribution and Behaviour of the White Pelican in the Athabasca Oil Sands Area.
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